ARCTIC RESEARCH AND POLICY ACT OF 1983

HEARING

BEFORE THE

SUBCOMMITTEE ON
SCIENCE, RESEARCH AND TECHNOLOGY

OF THE

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SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

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ARCTIC RESEARCH AND POLICY ACT OF 1983

TUESDAY, JUNE 28, 1983

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY,
Washington, D.C.

The subcommittee met, pursuant to call, at 9:30 a.m., in room 2318, Rayburn House Office Building, Hon. Doug Walgren (chairman of the subcommittee) presiding.

Mr. WALGREN. Today I am pleased to open our hearings on arctic research policy and our consideration of H.R. 2292, the Arctic Research and Policy Act of 1983. Polar research is an area of research of great importance to this country. We undertake it for reasons of science, national security, resource development, or because of just plain old curiosity about our Earth and how the polar regions affect it. In the Antarctic, the coordination of the U.S. research efforts is fairly simple. Excluding penguins, there is only one main U.S. player, the National Science Foundation of the Federal Government. While the Navy and Coast Guard provide logistics support, management of the program lies entirely with NSF.

The situation in the Arctic is vastly different. Twelve agencies of the Federal Government are involved in arctic research, along with the State government and the private sector. Since much of this research relates to the development of the resources of the Arctic, the research programs are of great interest to arctic residents, business and industry, environmental organizations, and others not directly involved in the research as scientists or engineers.

Because of the complexity of our Nation's involvement in the Arctic, it is important that we have an arctic policy which addresses research activities. The President, in national security decision document 90, issued this past April, instructed the Interagency Arctic Policy Group to review and coordinate arctic policy, including scientific research. These reviews are currently underway.

An alternative approach is specific legislation which addresses the issue of the development of a comprehensive arctic science policy through the creation of an independent council. Such an approach is before us today in the form of H.R. 2292, the Arctic Research and Policy Act of 1983.

This subcommittee looks forward to hearing from our many esteemed witnesses how we might best develop a coherent science policy for the Arctic. Today's testimony will be carefully weighed as we consider possible action in this important area of concern.

Now, I take great pleasure in welcoming our first two witnesses, Senator Murkowski and Representative Young, both of whom represent Alaska in the Senate and House specifically.

I understand Senator Murkowski has a time commitment at 10 o'clock or thereabouts. We are very pleased you took the time to come and talk about this area with us. Senator Murkowski.

STATEMENT OF HON. FRANK MURKOWSKI, A U.S. SENATOR FROM THE STATE OF ALASKA

Senator MURKOWSKI. Thank you very much, Mr. Chairman. I appreciate the opportunity to appear before your subcommittee this morning, and I want to commend you for scheduling these very important hearings.

I had an opportunity of being in Alaska over the weekend and I might mention that Alaska is very much a land of contrasts. In Fairbanks, 400 miles south of the Arctic Circle, the temperature was 94°, which I think was a little warmer than it was here, although the humidity was much more pleasant.

Mr. Chairman, there are three major reasons the United States must embark on a sustained, policy guided, comprehensive research effort in the Arctic:

First, the Arctic represents our last great storehouse of strategic and energy minerals. Twenty percent of our Nation's domestically produced oil is produced in the Arctic.

Proven reserves of more than 32 trillion cubic feet of natural gas—or about 16 percent of all proven reserves in the United States—are located in Arctic Alaska as well as the oil that I referred to. The Arctic contains a unique, hostile, and fragile environment that challenges responsible exploration and development. As we continue to develop the resources of the Arctic, we must undertake a research initiative that will provide the data and information needed to make sound judgments and insure that development will proceed in an expeditious yet environmentally compatible manner.

Second, the development of a sustained, comprehensive arctic research effort will help provide answers to some of the global problems that are just beginning to be recognized in the Arctic. For example, the arctic air mass has been found to contain a surprising amount of industrial pollutants which originate in the Soviet Union and Northern Europe. Some scientists believe these pollutants, together with the increasing amounts of carbon dioxide known to be collecting in the atmosphere, could produce a catastrophic greenhouse effect which could warm the Arctic and eventually melt portions of the arctic icecap, raise sea levels, and alter global weather patterns. We need to know more about these phenomena, and a comprehensive arctic research effort will help provide some of the answers.

Third, the strategic significance of the Arctic is enormous. The Arctic represents our only common border with the Soviet Union. And yet, the Navy has closed the only full scale research facility we have in the true Arctic up in Barrow.

What research, for instance, is being done relevant to the defense of the Trans-Alaskan pipeline and the Prudhoe Bay oil facilities?

We have done a superb job of training our Armed Forces to fight in the desert climate of the Persian Gulf, from which we are currently receiving about 500,000 barrels of oil daily. But what have we done to prepare our Armed Forces to defend the facilities and the pipeline that supply us with over a million and a half barrels of our own oil daily? Twenty percent of our domestic supply, Mr. Chairman. Are we simply hoping that combat will never take place in the Arctic?

Mr. Chairman, this Nation has no arctic research policy. At the present time, approximately 15 Federal agencies are involved in a number of ad hoc arctic research efforts. While those efforts are individually useful, can they provide a complete, comprehensive data base on which we can base decisions of immense financial and strategic consequence? To what extent do these independent, uncoordinated Federal research efforts duplicate one another or those in the private sector? Since no clearinghouse dedicated to the collection and cataloging of arctic scientific data exists, what means other than informal channels are available for an arctic researcher to discover what other researchers are doing?

Mr. Chairman, it is very troubling to compare our arctic research program with those of other circumpolar nations. Of all the countries bordering the Arctic, only the United States lacks a national institute, laboratory, or any other central organization dedicated to the sustained planning and support of arctic research. Most of the Arctic is composed of ice covered seas. How many iceworthy research ships does the United States have exclusively available for research efforts? The Soviet Union has more than 20 such vessels; Canada has 9, Norway 8, Denmark and Japan each have 2; East Germany has 3, and the United Kingdom 4. How many do we have? One wooden trawler which operates solely in the Antarctic. We have actually had to use Soviet research vessels for U.S. federally funded research.

Mr. Chairman, together with Senators Stevens, Jackson, Gorton, and Congressman Young, I have introduced legislation which addresses itself to some of these concerns. The bill, the Arctic Research and Policy Act, has been adopted by the Senate in both the 97th Congress and—as of last night—the 98th Congress. Our bill would create an Arctic Science Policy Council and an Arctic Research Commission. The Policy Council would be made up of five members appointed by the President and charged with the development of, and responsibility for, a comprehensive arctic research policy.

Responsibility for implementation of the policy articulated by the Council would lie with a nine-member Arctic Research Commission. The Commission would survey the existing research undertaken in both the public and private sector, establish a central data collection and retrieval center to serve as a clearinghouse for nonproprietary and unclassified research data, and make research grants in an effort to fill the gaps in our knowledge of the Arctic.

The bill authorizes $25 million per year to fund the Council, the Commission, the data center, and the research grants targeted toward filling the gaps in our knowledge of the Arctic. I want to stress that $25 million is a minimal investment when compared to the value of arctic resources and the Federal revenues derived from those resources. The U.S. Treasury receives $3 for every $1 of Federal money spent in Alaska. In any given year more than $3 billion accrues to the Federal Treasury as a result of the petroleum related taxes and windfall profit taxes resulting from Alaskan oil production. Nearly $3 billion additional dollars went to the Federal Treasury as a consequence of the three Alaskan OCS sales held during the past 8 months. Only by developing an inventory of basic scientific data and information can the Federal Government maximize its return from the development of the Arctic's resources.

Some long-term savings can be realized as a result of an investment in arctic research. It has been estimated that nearly $1 billion of the cost attributed to the $8 billion Trans-Alaskan pipeline resulted due to the fact that we had little independent, recognized scientific data relevant to the technical problems associated with building an 800-mile pipeline to carry hot oil across permafrost ground. Let's not forget that the U.S. consumer will, over the long term, pay more at the gas pump as a result of that lack of data.

Mr. Chairman, another major concern of ours which has prompted the introduction of this legislation involves the need to mitigate development related impacts on the lifestyles, values, and culture of the Native Eskimo (Inupiat) population of the Alaskan Arctic. For example, at the present time we do not know how the migration of the bowhead whale—a mammal the Inupiat depend upon for their subsistance needs—will be affected by full scale production drilling in the Beaufort Sea.

We also need to refine the technologies needed to construct the artificial islands and drilling platforms capable of withstanding the tremendous ice movements which occur in the Beaufort Sea. Much of the basic research needed to fully understand ice dynamics can and should be undertaken by the Federal Government.

As you would expect, this type of research is extremely important to the Native community. Just as the residents of the Arctic must have a strong voice in the development of the Arctic's resources, it is mandatory that arctic residents play a major role in the new commitment to arctic research this legislation mandates. That is why the bill provides arctic residents their place alongside the scientists and industry representatives that comprise the Arctic Research Commission.

Alaska Natives are not the only Alaskans who feel strongly about this issue. Private citizens in Fairbanks, Anchorage, and other communities have raised and committed nearly $200,000 from individual donors to fund a pilot project to identify arctic research needs and establish their relative priorities. Their efforts could complement a similar initiative at the Federal level.

Now you may ask, what good will it do to create another governmental entity to address the fragmented nature of our approach toward arctic research? One answer lies in the fact that significant arctic research needs do not always fall logically into existing funding and organizational structures. It is a rule of thumb that if something that requires funding doesn't lie within the authority of a single Federal agency, it is often ignored. Even more shortsighted is the notion that since Alaska is the only State with territory in the Arctic and subarctic, research may be written off as being of purely local interest, and funding expected to come from State sources.

I believe a separate entity must be created which is dedicated to the development and implementation of an arctic research plan. Strengthening existing programs in, say, the National Science Foundation, would not get the same result. Funding and resources for arctic research would be too easily diverted to other research initiatives—perhaps in the Antarctic or elsewhere.

Research in the Arctic, where our citizens live and our resources are, has been shortchanged in favor of the comprehensive, policy guided research program we do have in the Antarctic. Our dedication to research in the Antarctic is motivated mainly by the mere existence of the Antarctic treaty. The policy which has shifted research monies away from the Arctic and toward the Antarctic has been based on diplomatic considerations rather than scientific criteria, and appears to come from the Executive level in its pursuit of foreign policy.

Mr. Chairman, my written testimony goes into great depth with regard to the specific workings of the council and commission, their compensation, the funding mechanisms and so forth.

I might say that many of these elements have changed a great deal since this legislation was first introduced by me almost 2 years ago. I look forward to working with you and your committee, Mr. Chairman, to continue to refine and improve this legislation wherever necessary.

Again, I thank you for this opportunity to express my views. I would like to indicate that my colleague, Congressman Young, I am sure, can answer any specific questions. I do appreciate your kindness in excusing me. We have a fellow Alaskan, Mr. Langhorn Motley, whose confirmation is up today for Assistant Secretary of State for Inter-American Affairs. That begins at 10 o'clock. As a member of the Foreign Relations Committee, I feel somewhat responsible to not only Senator Stevens, but Don Young, to make sure that is taken care of this morning.

So I would again like to thank you and your committee for allowing me the opportunity to testify this morning.

[The prepared statement of Senator Murkowski follows:]

STATEMENT OF SENATOR FRANK H. MURKOWSKI
BEFORE THE
SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY
COMMITTEE ON SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES
JUNE 28, 1983

Mr. Chairman, I appreciate this opportunity to appear before your Subcommittee this morning, and I want to commend you for scheduling these very important hearings.

There are three major reasons the United States must embark on a sustained, policy-guided, comprehensive research effort in the Arctic:

First, the Arctic represents our last, great storehouse of strategic and energy minerals. Twenty percent of our nation's domestically produced oil is produced in the Arctic. Proven reserves of more than 32 trillion cubic feet of natural gas -- or about 16% of all proven reserves in the U.S. -- are located in Arctic Alaska. The Arctic contains an unique, hostile and fragile environment that challenges responsible exploration and development. As we continue to develop the resources of the Arctic, we must undertake a research initiative that will provide the data and information needed to make sound judgements and ensure that development will proceed in an expeditious yet environmentally compatable manner.

Second, the development of a sustained, comprehensive Arctic research effort will help provide answers to some of the global problems that are just beginning to be recognized in the Arctic. For example, the Arctic air mass has been found to contain a surprising amount of industrial pollutants which originate in the Soviet Union and Northern Europe. Some scientists believe these pollutants, together with the increasing amounts of carbon dioxide known to be collecting in the atmosphere, could produce a catastrophic "greenhouse effect" which could warm the Arctic and eventually melt portions of the Arctic icecap, raise sea levels, and alter global weather patterns. We need to know more about these phenomena, and a comprehensive Arctic research effort will help provide some of the answers.

Third, the strategic significance of the Arctic is enormous. The Arctic represents our only common border with the Soviet Union. And yet, the Navy has closed the only full-scale research facility we have in the true Arctic -- the Naval Arctic Research Laboratory near Barrow, Alaska. What research, for instance, is being done relevant to the defense of the Trans-Alaskan Pipeline and the Prudhoe Bay oil facilities? We have done a superb job of training our armed forces to fight in the desert climate of the Persian Gulf, from which we are currently receiving about 500,000 barrels of oil daily. But what have we done to prepare our armed forces to defend the facilities and the pipeline that supply us with over a million and a half barrels of our own oil daily? Are we simply hoping that combat will never take place in the Arctic?

While the public research policy resulting from the implication of this bill will not explicitly address a great deal of defense-related research, it will create a research environment capable of providing the Department of Defense with the basic research, environmental data, and expert manpower it will need to better address some of these questions.

Mr. Chairman, this nation has no Arctic research policy. At the present time, fifteen or more federal agencies are involved in a number of ad hoc research efforts -- while those efforts are individually useful, can they provide a complete, comprehensive data base on which we can base decisions of immense financial and strategic consequence? To what extent do these independent, uncoordinated Federal research efforts duplicate one another or those in the private sector? Since no clearinghouse dedicated to the collection and cataloguing of Arctic scientific data exists, what means other than informal channels are available for an Arctic researcher to discover what other researchers are doing?

The recognition of these problems is not new. At this point, I believe it is appropriate to review the history of our attempts to create an Arctic Science Policy administratively.

The attention of Congress was first directed toward the lack of a comprehensive national Arctic Research policy in the 1960s when Senator E.L. "Bob" Bartlett from Alaska noted a disparity between the funding of Antarctic projects and Arctic projects. Senator Bartlett argued that since the United States was an Arctic-rim nation, Arctic research should be given the same or greater attention as research in the Antarctic.

Joseph Fitzgerald, Chairman of the Federal Committee for Development Planning in Alaska (established following the 1964 Good Friday earthquake), in conjunction with Senator Bartlett's efforts, initiated discussions with Federal agencies and departments on Arctic policy. The result of these discussions was the presentation to President Lyndon B. Johnson in 1968 of a comprehensive Arctic policy statement which called for establishment of a comprehensive Arctic research program. Unfortunately, the statement was not acted upon by President Johnson before he left office in early 1969.

These early efforts resulted in the establishment of the Interagency Arctic Research Coordinating Committee (IARCC) in 1968. The Committee was reorganized in 1972 as an interagency committee of the Federal Council for Science and Technology (FCST) with the National Science Foundation taking the lead role, and disbanded in 1978 as part of the President's Reorganization Plan #1, Executive Order 12039.

The National Security Council (NSC) adopted NSC Memorandum 144 in 1971 creating the Interagency Arctic Policy Group (IAPG). The Group was to develop a coordinated plan for scientific research in the Arctic. Memorandum 144 was reaffirmed in 1973 by NSC Memorandum 202. An attempt by IAPG to create an Arctic research policy foundered in 1982 when disagreement among IAPG agency members prevented issuance of their report.

The Study of United States Arctic Research Policy, mandated by Section 1007 of the Alaska National Interest Lands Conservation Act, P.L. 96-487, noted the continuing inability of the United States to establish a coordinated Arctic research program because of the lack of an explicit Arctic research policy to provide the needed guidance.

Indeed, the attempts to create an Arctic research policy administratively have all failed. Hence, the case for legislative action is strengthened.

The development of a sustained, policy-guided research program in the Arctic will chiefly benefit the nation in the following general areas:

1) It will allow the refinement of permit processes associated with resource development in the Arctic.

2) It will assist in the development of technologies associated with the development of renewable and non-renewable resources in the Arctic.

3) It will broaden the scientific data base useful in the resolution of defense-related questions.

4) It will provide data and improve international cooperation with respect to Arctic pollution, the climatological effects of atmospheric carbon dioxide, and other phenomena with international and global implications.

5) It will provide information necessary to the resolution of human health and habitation needs in the Arctic.

Mr. Chairman, it is very troubling to compare our Arctic research program with those of other circumpolar nations. Of all the countries bordering the Arctic, only the United States lacks a national institute, laboratory, or any other central organization dedicated to the sustained planning and support of Arctic research. Most of the Arctic is composed of ice-covered seas. How many ice-worthy research ships does the U.S. have exclusively available for research efforts? The Soviet Union has more than 20 such vessels; Canada has nine; Norway, eight; Denmark and Japan each have two; East Germany has three, and the United Kingdom four. How many do we have? One wooden trawler which operates solely in the Antarctic. We have actually had to use Soviet research vessels for U.S. federally-funded research.

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Research in the Arctic, where our citizens live and our resources are, has been shortchanged in favor of the comprehensive, policy-guided research program we do have in the Antarctic. Our dedication to research in the Antarctic is motivated mainly by the mere existence of the Antarctic treaty. The policy which has shifted research monies away from the Arctic and toward the Antarctic has been based on diplomatic considerations rather than scientific criteria, and appears to come from the Executive level in its pursuit of foreign policy.

This Act is not an attempt to create a new "super agency" to dictate to Federal agencies what their scientific research goals in the Arctic should be. On the contrary, existing agencies will greatly benefit from the centralization of research data. Nor is the Act a substitute for the funding of existing research projects underway in the Arctic. The purpose of this Act is to fund currently neglected areas of research essential to the nation's needs that might not lie solely within the purview of any Federal agency. The Act is also not an attempt to conduct State research under a Federal aegis. National needs and interests are the focus of the Act.

At this point, let me go into a little more detail with regard to the specifics of the bill:

Arctic Policy Council

The five-member Arctic Science Policy Council would be charged with developing a comprehensive Arctic Research Policy. The President would appoint each of the five members, with the Chairperson's appointment occurring with the advice and consent of the Senate. Two of the members would be selected by the President from lists submitted by the Secretaries of Commerce, Defense, Interior, Energy, State, and the Secretary of Transportation (on behalf of the Coast Guard), and the Director of the National Science Foundation. All of these departments or agencies are highly active in some form of Arctic research. The Coast Guard is given special mention because of its direct experience in the Arctic. The two individuals nominated for selection by the above departments and agencies must have a background in Arctic research.

The remaining members of the Council will be selected by the President from a list submitted by the Governor of the State of Alaska. Like their Federal counterparts, these representatives must also have a background in Arctic research.

The Council's main purpose is to develop and supervise an integrated national Arctic Science Policy. This policy should be developed in cooperation with the Governor of the State of Alaska or with the State agencies the Governor may designate. Since the State of Alaska is in the process of developing its own Arctic research policy, the Federal policy should be compatible with and complimentary to the State's policy.

Not later than January 31 of each year, the Council must publish a statement of goals and objectives with respect to Arctic research in order to guide the Arctic Research Commission (described more fully later in my testimony) in the performance of its duties. The Council would also provide Congress, prior to January 31 of each year, a report describing its activities and accomplishments during the proceeding calendar year.

The Council would take steps to facilitate cooperation between the Federal government and State and local governments with respect to Arctic research. The Council may also help ease cooperation among Federal agencies, although it is not intended that the Council "dictate" research goals to Federal agencies. Those Federal agencies involved in Arctic research would continue to do so. The Council would, however, in conjunction with the Commission, survey existing Federal research efforts, compare those efforts with stated policy goals, and act to address "research gaps" which exist in areas important to the nation's needs.

I also anticipate that the Council and the Commission will be in a position to facilitate cooperative research efforts with other nations in consultation with the Department of State.

Arctic Research Commission

In addition to the Council, the Act establishes a nine-member Arctic Research Commission whose members would be appointed by the Arctic Science Policy Council. Its major duties would be to:

1) survey existing research in both the public and private sectors;

2) establish a Data Collection and Retrieval Center in the State of Alaska to serve as a central clearinghouse for non-proprietary and unclassified research data;
3) make grants for Arctic research pursuant to the policy goals established by the Council.

Four of the nine Commission members shall be individuals with scientific credentials and expertise in the physical, biological, health, and social sciences.

Two members of the Arctic Research Commission shall be appointed from among residents of the Arctic who represent the needs and interests of Arctic residents and live in areas affected by Arctic resource development. It is my expectation that these members would be from the Native groups. Alaska Natives have a long historical association with the Arctic and comprise a majority of the permanent Arctic residents. Native representation at this level is both desirable and appropriate.

Two members of the Commission shall be appointed from among representatives of private industry that is involved in resource development in the Arctic. Clearly, private industry has undertaken a great deal of applied Arctic research. The expertise developed in conjunction with Arctic resource development will be of great benefit to the Commission in the performance of its duties. Moreover, private industry is particularly familiar with the Federal permit processes described in the GAO report I will mention later. The General Accounting Office believes that Federal permit processes can be improved if additional research is undertaken to identify new permitting procedures that may be necessary and existing procendures that may be excessive. Federal agencies, because they are not equipped with adequate information and scientific data, are inclined to be over-cautious in promulgating developmental guidelines and issuing permits. The "wetlands" permit process in Section 404 of the Clean Water Act, which must be followed in the course of most developmental activities in Alaska, has often been cited as a permitting process that requires too much of a permittee.

The ninth member of the Commission shall be a civilian employee or uniformed member of the U.S. Coast Guard. Such a large part of the Coast Guard's mission is the operation of icebreakers and protection of the ocean environment and resources, the Coast Guard necessarily has considerable experience in Arctic matters.

It should be stressed that the research initiatives funded by the Commission should chiefly consist of initiatives above and beyond those currently conducted by existing Federal agencies. It is not intended that Arctic Research Funds (accumulated pursuant to sections 9 and 10 of this Act) be used for research mandated by other Federal law or required in the course of another Federal agency's Arctic mission. Rather, the Commission's initiatives should be focused on currently neglected areas of research which are deemed important in the context of the general policy goals and priorities articulated by the Policy Council.

The Council would consult closely with the Commission on the programs and studies that are funded by the Commission, on recommendations for future research proposed by the Commission and on guidelines for administering and awarding Arctic research grants. Section 6 of the Act also requires the Commission to make an annual public report to the Council. This report should describe the Commission's activities during the preceding year in addition to making policy recommendations to the Council.

Finally, the Commission would cooperate fully with the Governor and the agencies of the State of Alaska on its recommendations for future research; the planning, funding, and logistical support of Arctic research; and the collection and dissemination of data.

Alaska Participation

The Act would provide that the State of Alaska may choose to participate in the Arctic Science Policy Council and the Arctic Research Commission and contribute to the Arctic Research Fund a sum equal to at least one-fourth of the amount appropriated to the fund by Congress during the previous year. For example, in the event that Congress appropriated $20 million for a given fiscal year, the State would be expected to provide an unencumbered appropriation of $5 million from which would be subtracted:

1) the fair market value of goods and services, of facilities, materials, and other support the State contributes to the Council, the Commission, and the data collection and retrieval center during that Fiscal Year; and

2) the amounts contributed by private individuals and organizations.

Should the State of Alaska decide not to participate, membership on the Council or Commission by individuals nominated by the Governor pursuant to section 3(b)(2), would be terminated.

Arctic Research Fund

The Arctic Research Fund established by Sec. 10 of the Act, shall be available for the support of the data collection and retrieval center, the research grants made by the Commission, and the other activities of the Arctic Science Policy Council and the Arctic Research Commission. S. 373 authorizes $25 million annually for Fiscal Years 1985, 1986, 1987, 1988 and 1989.

At this point, Mr. Chairman, I think it is appropriate for me to provide for the record a listing of some of the relevant research needs which might be addressed in as part of an Arctic research agenda. I do not intend to suggest that all of these research topics lie solely within the Federal government's purview; indeed, the degree of Federal responsibility varies. But I believe this list is illustrative of the breadth of present and future research that would be coordinated under the legislation.

I. Non-Renewable Resource Development

The Arctic represents the nation's storehouse of oil, gas, coal, and non-energy "hard rock" minerals. According to the National Petroleum Council's Report on Arctic Oil and Gas, released in December, 1981, the Arctic contains 24 billion barrels of recoverable but undiscovered oil in addition to 109 trillion cubic feet of natural gas. Other sources have estimated that Alaska contains over one-third of the total U.S. onshore reserves of oil. Moreover, some estimates of total reserves of natural gas both on and offshore in the Alaskan Arctic range as high as 260 trillion cubic feet.

Although measured coal resources in the Alaskan Arctic are relatively low due to the fact that area has not yet been fully explored, there is a hypothetical geological potential for over 1.5 trillion tons of coal to exist in Alaska north of the Arctic Circle.

High to moderate potential "hard-rock" (metallogenic) mineral deposits extend in a wide band across the Arctic region in Alaska. Gold, silver, lead, zinc, copper, platinum, tin tungsten, asbestos, chromium, molybdenum, barite, beryllium, and fluorite are known to exist in the region. Preliminary exploration indicates that uranium may also exist in the Arctic. The strategic and monetary value of these reserves to the United States is undoubtedly immense.

As the development of these resources continues, several broad policy issues must be addressed:

1) What is the susceptibility of the Arctic environment to disruption brought about by man in pursuit of Arctic

resources? What will be the effect of such disruption, and how can such disruptions be minimized?

2) What impacts will development have on the lifestyles, values, and culture of the native and non-native population of the Alaskan Arctic? How can those impacts be mitigated?

3) How can cost-effective development technologies compatible with reasonable environmental protection be best developed? What is the Federal role in the development of Arctic technology?

4) Are the Federal agencies equipped to fulfil their regulatory and oversight missions related to Arctic resource development? Do existing development-related Federal permit processes require too much information or not enough?

The latter point is of particular interest in light of a General Accounting Office (GAO) report issued on June 17, 1982. That report, entitled "Developing Alaska's Energy Resources: Actions needed to Stimulate Research and Improve Wetlands Permit Processing," stressed the need for additional Arctic research and called for changes in the Army Corps of Engineers' wetlands permitting process. As the report summary states:

> "Additional research is needed to evaluate the impacts of oil and gas-related activity in Alaska as a basis for promoting environmentally sound approaches to future development without unnecessarily increasing its cost. Such efforts should provide site-specific data to allow the tailoring of protection measures suitable for the areas

to which they are applied, and to minimize universal or blanket stipulations where they are not necessary.

The Corps of Engineers has been slow in processing wetlands permits, required for many oil and gas projects in Alaska, and has frequently included controversial and costly conditions -- such as seasonal drilling and waste disposal restrictions -- in its permits, without requiring substantiation of their need through research findings and site-specific data.

Congress should provide for three critical elements -- coordination, prioritization, and a source of funding -- when considering legislation to establish an Arctic research policy, and Federal and State agencies should use research findings and site-specific data to the maximum extent possible in support of permit stipulations."

(From GAO/EMD 82-44; 6-17-82)

In my view, the GAO report strengthens the arguments for more effectively planned and implemented Federal research in the Arctic, and I believe this legislation represents a timely legislative response to the problems specified in the GAO report.

Research Needs Related to Offshore Oil and Natural Gas Development

There have been numerous studies identifying research needs for the development of offshore Arctic resources, including those of the Polar Research Board, the Marine Board and the Marine Transportation Research Board, and the National Academy of Science. These studies have been undertaken for the Department of the Interior, Department of Transportation, and the Department of Energy, among others. The Arctic Research Program of the National Science Foundation has also contributed to the Federal effort. Industry, through the Alaska Oil and Gas Association (AOGA), has sponsored investigations of specific problems. Groups such as the Alaska Eskimo Whaling Commission have also conducted environmental investigations.

The Federal role in the past has in part been one of cooperation with industry. Petroleum industry projects have included the use of government laboratories and expert personnel. Some programs which benefit both industry and government have been jointly managed and funded. Policies to encourage future cooperation among government, industry and Arctic residents will help ensure long-range commitments to research in the complex Arctic environment.

Continuing study of the engineering properties of sea ice, including single-year, multi-year, and conglomerate ice, is needed. The dynamics of the interactions of sea ice with ships and marine structures during wave-driven storm conditions are critical, as is the collection of ice-keel and ice-scour data and analysis of ice-sea floor interaction dynamics. The effects of the force of large ice features, such as pressure ridges, on test structures needs to be better understood through field studies. I also want to emphasize that continuing dialogue with the indigenous people of the Arctic is critical to a complete understanding of Arctic conditions.

Many benefits would accrue from the development, evaluation and acquisition of remote sensors, both aircraft- and satellite-mounted. These could provide ice and meteorological data and other information required for navigation, communications, resource development, and environmental monitoring.

More ice-breaking research north of the Bering Straits is needed before year-round marine transport can be considered reliable or environmentally acceptable. Both the Coast Guard and industry energy production systems would benefit from this research.

Basic biological research must be done to determine the effect of oil pollution on the food chain, and to test various models for oil clean-up. In addition, sociocultural research into the consequences of resource development on the lifestyle of the residents should be undertaken.

Above are only a few examples of problem areas related to Arctic offshore development. Development is now in the very early stages. As activities expand in the future, research needs will also increase.

Research Needs Related to Onshore Oil and Natural Gas Development

Although onshore development and production of oil and natural gas is well-established some areas still need research. Current resource estimates suffer from limited understanding of the basic geology and geophysics of the Arctic. Continuation of efforts to secure an extensive geological data base, using geophysical and remote-sensing techniques, would support a better understanding of geological conditions and would be helpful for future exploration efforts.

The large gas hydrate resources found in the Arctic could greatly extend the production life of the North Slope if extraction of the hydrates from the permafrost could be done both economically and without damage to the physical environment. Similarly, research on producing heavy viscous oil would be useful since normal methods of steam drive may damage the permafrost.

Although seismic exploration, the principal method for oil and gas exploration, is used extensively in the Arctic, there are still unknowns about the effects of permafrost on the attenuation or distortion of seismic signals. Better understanding of low frequency wave propagation through the frozen ground as a function of temperature an depth of the permafrost is necessary.

Research Needs Related to Solid Energy Fuels

If large-scale peat harvesting becomes possible in the Arctic and sub-Arctic regions of Alaska, research will be needed to find ways to avoid damaging the permafrost and tundra in which the peat lies. Peat utilization will require research into gasification, solidification, and liquefaction technologies particularly suited to the Alaskan environment. Of special interest would be small systems that could be used on-site.

Research on synthetic fuel production from the large Arctic coal reserves would also be valuable. Special problems include the effects of large-scale water removal to supply steam for the synthetic fuel production, and the effects of large-scale heat dissipation (from the process plant) on permafrost regions.

Prior to any large construction of, for example, synfuel plants, or facilities to convert natural gas to methanol, research is needed in the behavior of permafrost, the properties of moisture-laden soil around large structures and the protection of wildlife habitat. Currently, gravel pads and pile foundations are used to support most structures at Prudhoe Bay. Chemical processing plants there or in the sub-Arctic may have to be set directly in the ground on pilings. The thawing and refreezing of the ground can cause severe problems. Improved research into frozen ground soil mechanics is essential if large construction is to take place in frost sensitive soils.

Research Needs Related to Energy Conversion

Much of the research appropriate to development of energy conversion and chemical processing is related to construction, water removal, and heat dissipation as described earlier.

Besides these, waste disposal techniques encounter special problems in the Arctic and sub-Arctic. The effects of waste materials on soil composition should be examined. Better monitoring of the air quality in the regions and examination of potential pollutants will be useful in setting air quality criteria. Finally, if a chemical processing industry is set up in Alaska, it will be useful to examine the effect of the cold climate on continuous operation of chemical processes.

Research Needs Related to Energy End Use and Conservation

Research in building techniques and siting in the Arctic and sub-Arctic will be helpful in creating more energy-efficient buildings. Research in insulating materials in Arctic and sub-Arctic buildings will be of continuing value in temperate regions of the United States as well.

The development on-site energy systems using peat, coal or other biomass resources will require research into siting, waste disposal, pollution control and transportation on a small scale. Such research also has wide applicability to conditions in the 48 contiguous States.

Research Needs Related to the Development of Coal and Hard-Rock Minerals

Since there is little large-scale commercial mining at present little is known about the operational problems and impacts of Arctic and sub-Arctic mining. The only exception is the onshore and offshore extraction of sand and gravel. Additional research is needed on the impacts of removal on the physical environment, Arctic residents, fish and wildlife and water resources and quality.

Information from pipeline construction and oil and gas activities is useful, but there are important differences between these projects and mining. Because large-scale Arctic mineral development is not expected to be commercially viable in the near future, the opportunity exists to compile baseline information on climate, wildlife, hydrology, permafrost, and vegetation and to test on a small scale the effects of disturbances similar to those created by large-scale operations. The success of mitigation and reclamation efforts can be evaluated before decisions are made about approving commercial-size mines, or regulating their operations.

Analysis of Arctic and sub-Arctic mining operations in other countries should be conducted. Initial Alaskan development projects should be monitored closely and information derived from these experiences shared with prospective developers, local residents, and government agencies.

Government and private efforts in mineral exploration and assessment would benefit from improvements in the application of mineral surveying technologies such as remote sensing, satellite and aerial photography, geochemical analyses, and seismology over large unexplored areas. An inventory of potential mineral resources is necessary for land management. Exploration and mapping activities by government agencies at the current pace could go on for a long time before most of Alaska is surveyed. If more cost-effective and efficient methods were developed, the time and effort required to complete surveying would be reduced.

Each phase in the life of a commercial mining venture has different requirements for access to lands. In exploration, large areas are surveyed to identify promising mineral areas for more intensive examination. During commercial extraction, more personnel, equipment, and supplies may be necessary. Finally, the product must be shipped to processing and marketing facilities. There is a need to develop suitable types of transportation to support each phase of commercial activity.

Expanded access, however, has potential consequences for conservation units (e.g. National Parks, Fish and Wildlife

Refugees, etc.), the natural environment, and local communities. Additional work must be done to identify these impacts, their extent, and possible mitigation strategies. This research would assist in selection of access modes best suited to the needs of the mineral developer and to the protection of the environment.

In its announcement of planned leasing of offshore areas for mineral development, the Department of the Interior noted that the areas would not be leased before environmental studies were completed. Additional research is required to identify potential impacts of offshore mining, and to identify any special technological requirements for such operations. So far, no significant offshore mining of minerals has occurred in Arctic waters. The importance of the areas for subsistence economic activities, and the possibility of adverse impacts on wildlife and fisheries must remain a top priority for research.

II. Renewable Resource Development

Although the issue of responsible development of oil and gas is what is generally at the center of controversy related to Arctic resource development, responsible development of renewable resources would also benefit from a coordinated Arctic research program. Arctic fisheries are the most important of the Arctic's renewable resources, at least at present.

Alaska leads the nation in the value of fish landings. It provides 25 percent of the nation's total value of fish landed. In 1982, Alaska commercial fish landings were worth $575 million and fish products were worth about $1.5 billion.

Most of these landings occurred in Bristol Bay, one of the Arctic's richest fishing grounds and an area covered by this Act.

In addition, Alaska has the largest underutilized resource in the nation. Of a total of 2.6 million metric tons of exploitable fish resources in the Fisheries Conservation Zone(FCZ) of the United States, 2.0 metric tons lie off Alaska. Of that, only .4 are presently exploited by the U.S. fishing fleet, and for the most part, this resource lies north of the Aleutian Islands.

Alaska provides 70 percent (or about $624 million) of the nation's export of U.S. fishery products (excluding products from "joint venture" operations with foreign nations.) Over half of the nation's fish exports are salmon products, most of which originate from the Bristol Bay Area.

It is difficult to measure the assets that will accrue to the Federal Treasury as a direct and indirect result of the development of Arctic fisheries, but they will be substantial.

Data on Arctic and sub-Arctic ground fisheries has been gathered for a relatively short period of time, and knowledge about them is limited. Consequently, there is a considerable need to continue data collection and analysis for research purposes as well as for determining proper catch allocations. Good information provides a sound basis for understanding population dynamics upon which fishery management decisions must be based.

Research, including data collecting and model building, to obtain projections of optimum yield over long periods would be valuable. It would provide information to the fishing industry on which to base decisions about capitalization for new vessels and processing facilities. Planning the capital formation and construction of fishing ships takes considerable time. Additional research to enable the Department of Commerce to provide quantitative long-range forecasts of allowable catches 2 to 3 years ahead would reduce financial risks and enable industry to make better use of its funds and manpower. In addition, research into processing techniques to retard deterioration would greatly improve the U.S. fishing industry's operations and economic viability.

Some progress has been made in using sonar systems for estimating populations of certain species. An additional use of sonar in minimizing incidental catch might be developed. Further research is necessary to reduce the survey costs associated with stock assessment and to improve incidental catch avoidance techniques.

In canning, examination of inspection procedures and requirements could minimize defective can closure and associated risks. Spectrometric examination techniques might detect certain types of faults. Research is needed to find more effective ways to pinpoint contamination in the canning process.

Commercial halibut fishing in the Bering Sea has been growing steadily. In 1982, local fishermen landed over 8,000 pounds of halibut rendering the fishery financially self-sufficient. Fishery ventures of this kind should be encouraged. One way to encourage development is to accumulate basic data about the resource, and about general ocean and climate conditions.

Continued federal support for science and technology efforts in developing Arctic and sub-Arctic fisheries will ensure good management of a valuable natural resource and benefit an important industry. The coordination of research by industry, the military, local residents and scientists on such topics as offshore energy, oceanography, weather and climate, and engineering in the Arctic environment would benefit fishery development as well. Since federal science programs are scattered among several agencies, a policy that provides a mechanism to coordinate them would bring savings in many areas.

Of course, fish are not the only renewable Arctic resource. Other industries with development potential are Arctic agriculture and the raising of fur and meat-bearing animals.

On the subject of Arctic agriculture, I might note that the Office of Technology Assessment published, in August 1982, a report entitled "Impacts of Technology on U.S. Cropland and Rangeland Productivity." This report states that 18.5 million acres of Alaska's lands are suitable for agricultural production. In addition, there are 100 million acres of tundra suitable for reindeer grazing that are currently untouched. These facts only begin to convey the potential for Arctic land to support grain production and to produce high-quality protein.

The technologies that will permit development of Alaska's agricultural potential may also be applicable to agricultural problems in more temperate zones, particularly in the northern tier states of the continental United States.

In summary, the development of the Arctic's vast potential of renewable resources will require careful planning based upon sound scientific data. In the absence of an Arctic research policy and a sustained, comprehensive research effort in the Arctic, the danger of irresponsible, short-sighted, and costly development on the one hand, and of overregulation and unwarranted constraints on the other, is a very real possibility.

III. Other Research Needs

Research Needs Related To National Defense

The hearings held before the Senate Governmental Affairs Committee on the Arctic Research and Policy Act during the 97th Congress gave cause for concern with respect to the neglect of security-related research undertaken by the U.S. government in the Arctic. In spite of the fact that the Alaskan Arctic is strategically located on both the Arctic and the Pacific rims, and the fact that it represents our only common border with the Soviet Union, there is little defense-related research underway in the U.S. Arctic. This is distressingly illustrated by the recent closing of the Naval Arctic Research Laboratory in Barrow, Alaska.

There is little doubt that the broadening of the basic polar research data base could assist the Department of Defense in addressing a number of questions crucial to our defense capabilities. For instance, how would the guidance systems in our "over the pole" ballistic missiles operate under the intense auroral displays or magnetic disturbances common to the polar regions? How do higher latitude space disturbances affect orbital or over-the-horizon surveillance systems? Only basic, sustained federal research can provide the foundation for the resolution of these and other defense-related questions.

Research Needs Related to Weather, Climate and Arctic Pollution.

Both short-term and long-term research is needed to improve our understanding of the cause and effect mechanisms of Arctic weather; and more information is required to improve forecasting capabilities. Some types of research problems require participation of all concerned nations because of the wide expense of territory involved. Observational programs require improvements in instrumentation. Especially in the far North, remote weather monitoring stations using satellite data transfer are needed to gather information required for improvements in regional weather forecasting. In addition, forecasting techniques for Arctic regions, including the prediction of marine conditions and shoreline storm surges, require development.

There is a need to monitor, survey, and forecast ice conditions, especially at the time of Arctic ice break-up. Shipping, fisheries, and resource development industries, as well as the Coast Guard and Arctic residents, would all benefit from this effort.. The monitoring system could include shore-located, aircraft-mounted, and satellite systems.

The Federal Government, through the Department of Commerce, now participates in several important climatic research programs with other countries. Further research and understanding of Arctic climatic conditions is essential to understanding global climatic conditions and patterns.

Continuing development of global and regional climate models is required to permit forecasting of climatic changes with scientific confidence. Large scale Arctic meteorological-oceanographic heat balance observation programs are necessary to provide data for these models.

Continuing observation programs (i.e., open water observations over a long period) are necessary to monitor climate trends. Polar orbiting satellites equipped with ice measuring sensors and sensors for weather/climate and sea condition measurements could collect data over large areas.

Knowledge concerning the indigenous peoples of the Arctic is a unique science resource that could be developed to better understand all aspects of the climate in the Arctic.

Scientists at the Lawrence Berkeley Laboratory have recently discovered that the Arctic may be polluted with large concentrations of black soot particles and pollutants that did not originate in the Arctic. Some computer models suggest that a catastrophic "greenhouse effect" might be created as a result of these pollutants. The consequent rise in global temperature could, it is speculated, partially melt the polar ice caps, seriously affect the distribution of rainfall and create arid conditions in currently productive agricultural areas. This research will certainly require international scientific cooperation.

Research Needs Related to Arctic Health and Human Habitation.

Arctic health research deserves attention within the larger context of an overall Arctic research policy. As pace and scale of developmental activities in the Arctic accelerates, they are accompanied by increased human health impacts on Arctic residents. Large gaps exist in our scientific knowledge of the Arctic and the application of this knowledge to the nature, causes, effects, and control of diseases. The current institutional framework for the conduct and support of Arctic health research is inadequate. In addition to the striking inadequacies in the physiological data base available for Arctic research, no medical or health research units exist to assess problems related to occupational safety and health or to the long-term environmental health consequences of life in the Arctic.

Current research activities in the Arctic which could provide information on human health in other geographic areas include:

1) Research into paralytic shellfish poisoning or zoonotic diseases;
2) Hepatitis-B infection and vaccine efficacy studies;
3) Invasive Hemophilus influenza; and,
4) Dietary effect on lipoproteins, prostanglandins, and atherosclerosis.

I might add that The American Medical Association and The American Public Health Association have recognized the importance of health research in the Arctic, and have each adopted resolutions supportive of S.373.

Other issues related to human habitation would benefit from a program of Arctic research based on a comprehensive policy. Improvement of technologies in construction engineering such as adaptation to local conditions, identification and implementation of small-scale technologies to suit the scattered population, would be a valuable service to local residents. Basic research on soil properties and mechanics, especially erosion and permafrost, are still needed. This information will improve building design and construction and assist in the engineering of roads, airports, and similar facilities. Erosion of beaches and banks along the Arctic coast is a continuing problem. In populated areas such as Barrow, erosion has been accelerated by the use of coastal deposits for onshore construction (e.g., road and airport fill.) Knowledge about tundra erosion is also lacking.

Basic research on particular hydrological properties of the Arctic water cycle would also be useful. The interaction of factors like temperature and flooding need to be explored. The Department of the Interior, in its December, 1981 Section 1007 ANILCA report, notes that its researchers were unable to sample some streams to determine fishery potential because high water conditions caused excessive turbulence and turbidity.

In surveying rivers and lakes to identify potential winter water availability and to ascertain the location of hazards such as overflowing ice, Interior Department investigators found that river flows fluctuated widely. More data on the factors contributing to such conditions should be obtained before water treatment plants are installed.

Applied research as well is critical if technologies are to be appropriately adapted. Especially advantageous are small-scale technologies that address immediate problems. The use of synthetic insulation in place of gravel for protection of the permafrost under buildings is an example. Another is the substitution of incineration or biodegradation for traditional sewage treatment.

Mr. Chairman, I appreciate this opportunity to share these ideas with you. I look forward to working with the Subcommittee as it contributes its ideas and expertise to the process -- a process I hope will result in the new legislation and new approach toward Arctic research.

Mr. **WALGREN**. The committee certainly appreciates that. It is really almost 10 o'clock, I am sure that our colleague, Mr. Young, will be able to support and expand on any of the elements that the committee may try to raise for discussion. So let us just express our appreciation for your coming over and we look forward to working with you on this.

Senator **MURKOWSKI**. Thank you. I would be happy to entertain any written questions, written requests, in response to the committee in full and, I would like to submit for the record a 34-page documentation of the legislation.

Mr. **WALGREN**. Without objection, that will be incorporated in the record.

Thank you very much.

Following on is our House colleague from Alaska, Congressman Don Young. We appreciate your being here and your interest in this bill. Your written statement, of course, will be made part of the record, so, please proceed as you would like to in outlining your thoughts on this bill. Of course, you know that I and the other members of the committee are very interested in trying to work on this problem and give it the attention of the subcommittee. We look forward to talking with you both formally and informally about it.

Mr. Young.

STATEMENT OF HON. DON YOUNG, A U.S. REPRESENTATIVE FROM THE STATE OF ALASKA

Mr. **YOUNG**. Mr. Chairman, thank you for your consideration in hearing our Senator from Alaska and excusing him on time for his other duties.

First, let me say one of the best things you can do for this legislation is to accept an invitation from myself and my Senators and the Governor of the State of Alaska to visit our State and see the beauty and grandeur and also the opportunity that exists up there, and I do extend that invitation to you sincerely and hope sometime in the near future that you, the chairman of the subcommittee and the chairman of the full committee can arrive in Alaska and understand what Senator Murkowski and I are speaking of.

Mr. Chairman, I will submit my written testimony at this time and ask that it be submitted, and I will not read it in deference to time, and in respect of the committee. At the same time, Mr. Chairman, I would like to submit a letter from the Governor of the State of Alaska, Gov. Bill Sheffield, in support of this legislation, H.R. 2292.

Mr. **Walgren**. Without objection, that will be incorporated in the record.

[The Sheffield letter follows:]

BILL SHEFFIELD
GOVERNOR

STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

May 31, 1983

The Honorable Doug Walgren, Chairman
Science Research and Technology Subcommittee
Science and Technology Committee
United States House of Representatives
Washington, DC 20001

Dear Mr. Chairman:

The State of Alaska has a significant interest in HR. 2292, the Arctic Science Policy Bill. Establishment of a coordinated approach for support of research in the Arctic is important to both the Nation and to the State of Alaska. This bill reflects State and national concerns for research needs and for the significance of information and data retrieval in maximizing the usefulness of research activities. The bill also reflects the fact that the advancement of research is a partnership between government and private industry.

In these times of declining oil revenues and general economic uncertainty, the portion of the bill which obligates the State to contributing a quarter of the amount appropriated by the Federal government into the fund is of concern. While a long-term commitment may be difficult for the State at this time, I understand that in-kind contributions to all Arctic research activities in State government, the University of Alaska, and other public and private institutions can be counted as part of the State's contribution. Further clarification on this portion of the bill would be beneficial, however.

Should any questions arise during your deliberations on this subject, please contact me or John Katz in our Washington, DC, office at 624-5858.

Thank you for your consideration of this correspondence.

Sincerely,

Bill Sheffield
Governor

Statement of
Honorable Bill Sheffield
Governor of Alaska

Before The
Science Research and Technology Subcommittee
Science and Technology Committee
United States House of Representatives
Regarding
HR. 2292, the Arctic Science Policy Bill

Mr. Chairman, I am pleased to appear before you today to present the views of the State of Alaska on HR. 2292, the Arctic Science Policy Bill, introduced by Representative Don Young.

The need for a strong United States Arctic Science policy, and for coordination of research programs in Alaska and other areas of U.S. Arctic interest, have long been recognized.

Establishment of a coordinated approach for support of research in the Arctic is important to both the nation and to the State of Alaska. The concept and necessity of an Arctic research policy has had the benefit of over fifteen years of thought, discussion and concern. This legislation has undergone some important revisions during its review and endorsement by the Senate. The bill is now in a form that reflects State and national concerns for research needs and for the significance of information and data retrieval in maximizing the usefulness of research activities. The bill also reflects the fact that the advancement of research is a partnership between government and private industry.

Despite Alaska's image as a northern oil sheikdom, our wealth is not nearly as great as believed. The cost of doing virtually anything is much greater in Alaska than in the continguous 48 States. Distances are vast; our population dispersed. Alaskans are discriminated against by the tax laws which take a higher proportion of our earnings, without regard to the higher cost of living in Alaska. Our projected oil revenues are declining, resulting in stringent spending limitations. Yet, these very revenues must pay for the great developmental expenditures we must incur in order to provide economic alternatives for the day when Alaska's oil, such an important contribution to this Nation's economy, will inevitably be gone.

Much knowledge is needed if we are to assure that Alaska's human and natural resource endowment is to achieve its full potential. Though great strides in Arctic research have been made in the past 15 years respecting certain key disciplines, we still lack the scientific background and engineering capability to achieve the rewards of coal and strategic mineral development, and development of offshore oil and gas resources in ice-stressed seas. We still do not know enough about the population dynamics and behavior of the bowhead whale or caribou, perpetuation and sustained utilization of which are critical to the physical and cultural well-being of dependent Native peoples. We lack knowledge of the potential impacts of offshore oil and gas developments upon our vast fisheries resources, which must form one of the mainstays of our economy after Alaska's oil resources are depleted. We even lack an economically feasible technology for provision of reliable and sanitary water and waste disposal systems to citizens of our rural communities, many of whom remain among the most disadvantaged citizens of this Nation.

In these times of declining oil revenues and general economic uncertainty, Section 9 of the bill which obligates the State to contributing a quarter of the amount appropriated by the Federal government into the Fund is of concern. While long-term commitments of this sort may be difficult for the State of Alaska at this time, I understand that in-kind contributions to all Arctic research activities in State government, the University of Alaska, and other public and private institutions can be counted as part of the State's contribution.

In this regard, I suggest that Section 10(d)(2)(A) be amended to read:

> In determining the amount contributed to such fund by the State of Alaska for a fiscal year -
> (A) the fair market value (as determined by the Council in good faith) of all facilities, services, materials, and other support contributed to Arctic research or the Fund by the State of Alaska during such fiscal year; and,
> (B) all amounts contributed by private individuals and organizations shall be taken into account.

Further clarification of the terms "facilities, services, materials and other support" as described above in Section 10(d)(2)(A) would also be helpful in assessing the State of Alaska's monetary contribution to the Fund.

If these suggestions are adopted as amendments to this legislation, then I believe we can institutionally establish the mechanisms for an effective Arctic research program, not just from the Federal sector, but in partnership with the State of Alaska and with the private sector and university community.

In summation, I would like to reiterate support by the State of Alaska for this legislation. The effort invisioned by the bill's sponsors can help us regain our standing among our circumpolar neighbors and, most importantly, assure that our Arctic regions are treated with the foresight and respect its very richness and beauty so rightly deserves.

Mr. YOUNG. Mr. Chairman, I believe it is long overdue that the Congress and the United States recognize the importance of the Arctic. We have heard much about Byrd and the Antarctic and the importance of that area, the joint efforts of the international scientific field and their endeaver in the Antarctic, but there has been little done in the Arctic, little understanding of the Arctic, and much of what the Senator said, the cost to the American people because of a lack of knowledge during the pipeline construction, is an example of that lack of knowledge.

I will not lay the blame on the Navy for closing their area, their northern site, because I believe that they thought in their own minds that they had achieved the basic goals, but that was before the importance of the Arctic had come to the American people.

When we speak of the Arctic—the map itself should explain the Arctic isn't just here, it is really this area—it goes all the way around the top of the world. I have a philosophy or thought that this area, the top of the world, is going to solve most of the problems in the middle and the bottom of the world because it is where the resources lie; it is where the food chain begins; it is where every area in the lower 48 will receive benefit in the far, far range of time. If we don't have the study——

Mr. REID. While you are at the map, could you tell me the distances we are talking about?

Mr. YOUNG. The distances—for instance, I am in the Arctic, I am the only Congressman in the Arctic, by the way. From here to here is approximately 395 miles to the Arctic. From here to Barrow is approximately 600 miles. Then you are talking about, of course, the circumference of the Earth. The pipeline itself is 800 miles long. There are five time zones in the State of Alaska.

I want to brag a little bit. there is a lot of room up here and we are the only State in the Arctic—I don't look upon it as a State problem. This State, if you wish to call it a State, is also part of the United States and it is owned by the United States. We are a State not only in body of land but the research to be done here is vitally important primarily because of the Beaufort Sea, and all the others, the Bering Sea, the areas that control the currents that flow within Alaska and also down in the south 48 and, of course, the activities in Russia.

I honestly believe this has to be an international program. It has to be able to cooperate with Russia, it has to cooperate with Canada, Finland, and all the way around the globe, because it is a cap on the Earth and that is what we are speaking of.

Now, we have a breakdown of what the the legislation does, the appropriations of moneys. The State of Alaska is committed not only by the Governor, but by individuals. We plan on raising $500,000 alone, by individual contributions, to try to aid in implementing this legislation. This is for the benefit of the Nation, not just Alaska. Everything Alaska does in the future, on its own land, and the Federal land, will directly benefit this nation.

I would like to stress another point that the Senator brought out. I do not believe that it can only be a program to study the potential of raw resources or acid rains or whatever may occur. We have to understand that there are indigenous people that live in the Arctic and these are very different types of people, but they must be taken into consideration in the effect of any development, et cetera, on their lives and their culture. I think that is vitally important. It is probably the only weak area in the bill. Probably later we can address that issue and you will have advice and suggestions from other witnesses later on in the day.

Again, I can stress to this committee, this is not a boondoggle, it is not a seeking by the State to achieve extra moneys, but rather, an effort to have individuals involved with Congress recognition of the importance of the Arctic to the world. And I would seek, while we are doing this, through the institution of the Commission, the international implications so we can work together, because you cannot divorce yourselves—you look at the proximity of Alaska to Russia, the proximity, of course, to Canada and the proximity across the pole, which is only 4½ hours across the pole, to Europe.

I have often said I am closer to Europe when I am in Fort Yukon than when I am in Washington, D.C. Of course, I am closer to Tokyo.

I again have submitted my written testimony, and my letter from the Governor, and if there are any questions this committee would like to ask, at this time, I would gladly submit to those questions.

Mr. **Walgren**. Thank you very much, Mr. Young. Let me recognize other members of the committee for thoughts and discussion.

Mr. Skeen.

Mr. **Skeen**. Thank you very much, Mr. Chairman, and I want to say to Don it is always a pleasure to have him before any committee. He is such a laid back, understated guy.

Alaska being one of the few States that has three Senators or three Congressmen, however you want to look at it—also recognizes the fact, too, that this gentleman has always had a particularly intense interest in the development of one of the largest areas in the United States, that we know so little about and appreciate so little because it is so far removed from us, and with this combination of a large remote area, still great resource possibilities. In trying to juggle a combination, how do you protect the environment and how do you develop resources to provide the kind of background that we have to sustain the life that we lead on this Earth?

Particularly, Don, I would like to ask you one question. I am a little amazed that in the Arctic operations, we have several agencies that either have administrative functions or scientific functions. What are there, 12 of them?

Mr. **Young**. That is a difference of opinion. Either 14 or 12. We have plenty of Federal involvement in the Arctic and in Alaska, of course.

Mr. **Skeen**. I gather from the testimony, the need for the bill itself is that there is so little coordination going on between the various functions as opposed to the kind of singular operations that goes on in the Antarctic. Is this true or not true?

Mr. **Young**. Absolutely true. One of the unfortunate facts, and without laying blame on any one of the agencies, there are always turf battles. That is unfortunate because we are dealing with relatively unknown areas and I would hope, through the Commission they would not lose that turf but there would be a clearinghou or a direction in which we are going, and so we do get into not only the development of the resource, but the effect of the development upon the people and climatic conditions.

There are numerous things we really don't know. Would we do damage to the fragile tundra? What is the value of maybe developing coal resources? We have got more coal in the Arctic than we have in the rest of the United States. But how do we extract that coal if necessary? That is important. People forget if we don't know how we are going to extract it, and we do need to extract a long way down the road, what effects would occur?

Those are the types of things, hopefully this Commission, this institute would be able to coordinate with the rest of the agencies so we would know which hand is shaking the other hand and how.

Mr. SKEEN. There is a decided lack of coordination between the efforts that we have at present. Yet I know some of them have a lateral type of focus on what they are trying to do and what their missions are. It is just amazing to me that we can't get our act together up there as far as Federal programs are concerned. Maybe in your opinion, maybe you don't want to give an opinion on it, but I don't know whether it is overlap in scientific focus or goals, administrative goals, or whether it is just the budget, that is the funds that go into these various departments.

Mr. YOUNG. Congressman, two basic problems have always existed in Alaska. This is the last large area other than your State of New Mexico, that has vast quantities of Federal lands or controlled and adjacent to one another with little coordination. The parks have been infiltrated in the past with those who believe there should be no studies at all, no understanding at all. We should preserve it as the good Lord made it and we will be living in Utopia. I argue against that. Knowledge protects the environment. The lack of knowledge destroys it.

And we have refuges which have been considered in different aspects and, of course, we have BLM lands and forestland and State land and native lands. I will even to this day criticize the State to some extent. We are new, we will be 25 years old January 3 of next year. We are celebrating our silver anniversary.

We have not really come up with an understanding of the Arctic because, as the interplay and different bodies of land and different agencies—and that is unfortunate—we hope to arrive at that with support of the Governor and support of the private individuals, they are beginning to, within the State of Alaska—citizens which I represent—understand the importance to the State as well as to the Nation.

It is now time that we get the agencies to agree to a policy of the Arctic, a policy not only on how it shall be developed but how it shall be protected and what it shall provide to the people in the lower 48.

Mr. SKEEN. I know that industry has had a tremendous interest in the north, a lot of things have been done, for example, the pipeline. I want to ask, how is that working out? There was a lot of concern about the loss of——

Mr. YOUNG. I can tell you it is the finest man-planned project in the world. I would like to call it the 11th wonder. I pick 11 because that is a lucky number. It is working well. We have had absolutely no problems of any significance. Instead of costing about a billion, it cost us $10 billion. Now it would cost $40 billion. You might look at it as a pie. It is delivering one-fifth of our domestic consumption to the United States. It is probably the finest engineered project that has ever been built by private industry.

Private industry has been semi-involved in Alaska, but again, private industry has—a lot of times they have pockets of interest but they don't have the overall interest, and I cannot truthfully say I expect them to carry the burden of establishing an arctic policy. I think that has to be national policy, made by Congress, setting up this institute, so that private industry can contribute and can participate as well as the private individuals, but this has to be addressed by the Congress on primarily the Federal lands, but in conjunction with the State lands.

Mr. SKEEN. I am sure you have done soundings. How does industry look upon this effort?

Mr. YOUNG. When we talk about industry, we are talking about gas, oil, minerals, and hydro-sites. I have found a great deal of enthusiasm. I am sure they will participate in the program. They very honestly, because of diversity, do not want to take the lead, but they will participate with scientists, participate with money, one way or the other, and there is a great deal of interest, because it is to their advantage to have a lead agency in developing Arctic policy as we go through.

Mr. SKEEN. How is the caribou migration?

Mr. YOUNG. It is up. Our Arctic herd is increased, the Prudhoe Bay herd has increased, the Porcupine herd is increased, and contrary to what people say, man's activity as far as other than hunting, does not affect game to the degree as people would question.

Now hunting, if it is not controlled, managed adequately, can cause concerns. But the rest of it, the caribou use the pipeline for a back scratcher right now. We have pictures of goats running up and down the pipeline causing what we call express highways, simply I-66. I don't want to get off on that subject, it is a great project.

Mr. SKEEN. I thank you very much. Good to have you here.

Mr. WALGREN. Thank you.

Mr. MacKay.

Mr. MACKAY. Mr. Young, I have a great deal of sympathy with the frustration that you feel and the Senator expressed, and the questions I am asking are not designed to try to put forward my point of view but to explore what appears to be a policy issue.

I can understand the need for the commission but the council, that seems to me leaves us in a position where we would have an Arctic exploration policy being set by the NSF, and an Arctic exploration policy being set by a separate council.

I think the same thing that makes your argument persuasive about our need to really be involved in the Arctic, would lead one to the conclusion that it needs to be a coordinated effort with what we are doing in the Antarctic. There is no point in duplicating, that is another layer of the same 14 agencies duplication you have got now.

Mr. YOUNG. Well, the answer to that, I think there has to be two different commissions primarily because commissions that are made up, their prejudice would lie in the Antarctic. I think we can coordinate that work though, apply the known knowledge gained in the Antarctic where it would fit into the Arctic. I want to stress that again. The Arctic is a whole lot different physically than the Antarctic and it has been inhabited, where the Antarctic has not been inhabited. We have a people factor historically where the Antarctic has never had one. It is a different climate.

At my home, which is in the Arctic, for instance yesterday it was 106 degrees. One hundred six degrees. But next year, say December 25, it will be maybe 79 below. That is where it gets the Arctic definition. That does not occur in the Antarctic as far as land mass. We grow food, for instance, in the valley which I come from, which again is in the Arctic. We think of the Barrow area, which is in the Arctic, whales, where the plankton train starts. But in my area again, we have the capability, if we are allowed to—which will not occur—but with the proper research, we believe with what little we have been able to do at the University of Alaska, we can probably feed 22 million people in the world.

We grow tree crops. You can't do that in the Antarctic; you can do it in the Arctic. There is a difference, and with all respect to those who have had activity in the Antarctic, I am confident if we had that group run the Arctic group, they would be more prejudiced toward the other. That is a natural phenomena. I do think the two have to be separated, but wherever it applies, use that knowledge so we don't have to duplicate it.

Mr. MACKAY. How would you see this Council? That is the point at which I see the duplication. How would you see it tied in with the NFS?

Mr. YOUNG. Well, I don't, frankly. I can't imagine if the Commission does its job correctly and employs or has contact with the scientists, how the scientists—they work relatively close together—it is hopefully not a close knit organization or close knit profession, but there is the exchange of information. I am sure the research is available and they could borrow from the antarctic activity by the scientists and it would be an exchange back and forth, but I think again the emphasis has to be because diversity of the Arctic is an example.

I want to comment on one thing. Again let me stress, we are the only Nation that does not have an arctic policy. Canada has been deeply involved, and Finland has. Russia is far, far advanced to us, and I believe there is where it has to be an international exchange. We can borrow from them where they have made their mistakes—and believe me, they have made their mistakes—but they have also done some great things, and that would be part of the existing work. It is the scientists at work in the Antarctic who are more in the total research of a noninhabited area, and there is no comparison such as the Soviets in Siberia versus Alaska itself.

That is again, you can go through this, work it out—and I am not an expert, particularly in the field—I know my State, I know the Arctic, but the institute, the Commission, again, in my own mind, has to be established separately.

Mr. MACKAY. Thank you.

Mr. WALGREN. Mr. MacKay, thank you.

I guess I certainly understand the thought that there is a sort of built-in momentum in any organization in its focus, and that that would certainly apply to the Antarctic. But it is also true, isn't it, that NSF has a substantial effort in the Arctic at this point, and that really when you get down to the research dollars in the Antarctic, because so much of their effort is burned up in the logistic support, that you are really talking something in the range of $10 million in the Antarctic and a comparable figure in the Arctic.

And I guess what my question is, maybe there is no way other than in trying to get to the bottom of how substantial that momentum factor is in each of these areas. But, would you see the possibility of the NSF, since it already does have some effort going in the Arctic, through personnel direction, and interest expressed there, that it would be a proper vehicle for the Arctic?

Mr. YOUNG. It could be, but they have had the time to do this and they have not done so. There is really no arctic policy. It could be if someone was directed to do it. I doubt, unless that direction comes forth with congressional action, which is what we are asking here, it will happen. The efforts which you speak of are minimal. I am not saying that disparagingly against the NSF at all, that has not been their interest.

Another thing, if we have to understand that we are trying to get the State involved—the State will put up one-fourth of the money—they are not going to do it under the present system. I say that with respect. Again, understand the human factor.

So we are talking about a joint effort by the Federal Government, primarily given the recognition so we can work in conjunction with the international scientific community—the top of the Earth instead of the bottom of the Earth—as they have done so well in the Antarctic.

I am convinced in my own mind, Mr. Chairman, if you do not have this separation, that again the interest and love and concept will lie in Antarctic and will not lie in the Arctic, regardless of what the country.

Mr. WALGREN. I hear you placing real emphasis on the thought of a science policy, and to a certain degree, I think we have all been frustrated that we don't have at least a strong, coordinated science policy in our Federal level, and in fact voices argue not to have such. That all the good things happen without any direction in a way. I am wondering, is that the driving need here, that in a sense we have that NSF involved on a level of *x* millions of dollars, but we don't get much policy out of NSF. That we get the approval of some discrete scientific research programs, but not really a comprehensive effort to take account of a multitude of interests. So I guess it is no surprise that the NSF effort does not reflect very much policy.

Mr. YOUNG. I believe you are correct in that and this goes against some of my philosophies. I believe many times we think everything can be achieved by just the involvement of the private sector and the individual, but you have to remember again—I want to stress the area, the area we are speaking of. We are not talking about a State-owned area or a privately owned area, and any one of the contiguous bodies of land which I am speaking of—Russia, even

Alaska, is owned by the Government. Russia is owned by the Government. Believe me, Canada is owned by the Government.

The reason why it handicapped the private sector is because of the involvement of the Federal Government. It handicaps the States because of the involvement of the Federal Government. The only way you can establish a cohesive policy is by having a Government direction. That may be blasphemy to speak on my side of the aisle, but it is the truth. That is what we are dealing with here. You go right across the border you have got totally Government controlled land. If you look at Alaska, 70 percent is owned by the Federal Government. You can go up in Canada, it is the same thing.

There is no way that you can get another area—the scientific community—to set a policy or direction. You do that in the Antarctic because you have already established this joint cooperative effort and yet you don't have much policy out of that either. That is my big interest. I think this is a different factor and the results of policy, the understanding and scientific research will preclude any long range environmental damage. It will be able to provide, I believe, the needed resources to the rest of the world.

It is there, not just oil and fossil fuels and coal, but the food chain starts in the Arctic. And you don't have as many whales and seals and walruses, and a walrus weighs 4,000 pounds and he eats nothing but oysters and clams. That means there is a heck of a lot of oysters and clams in the Arctic and we haven't done anything about that. I am not sure we have to, but it is there.

Why do whales migrate, why do they give birth up there? Because the food is there. Why do the ducks and geese migrate back there to nest? Your home is where you give birth to the future. That is what we are talking about in the Arctic. Don't get me started on that or I will talk all day.

Mr. WALGREN. Have you any experience with this Interagency Arctic Policy Working Group—and I have, of course, none. Is there any resource there that is helpful? What has been the experience and their shortcomings?

Mr. YOUNG. I have had little experience. I believe there are resources there, but I can't give you a specific answer, Mr. Chairman.

Mr. GREGG. Thank you, Mr. Chairman.

First, I would like to congratulate our witness for presenting this bill. Alaska is such a huge chunk of land. For those who come from small States, it is just impossible to perceive the size of it, and I think it is essential that when we are dealing with that we have someone we have confidence in as a spokeman for the State. That is why it is so good to have Congressman Young here today, whom I have the highest regard for someone most concerned about his State and he is a tremendous spokesman for it.

I was going to follow up on the interagency issue. How would you see your policy group relating with that interagency group, if at all?

Mr. YOUNG. Well, again I can't direct the human factor, but I do believe that scientists, the commissions that have joint interest in Arctic and Antarctic would be very, very foolish to not cooperate, because there is a factor of state money—one-fourth. There would be an appropriations process by the Congress and if we saw that there wasn't the cooperation occurring, I am sure we could bring everyone to task and understand what is going on.

I can't imagine them not. This is something that is long overdue and I think it would give tremendous opportunity to some of our learned scientists and some of our scientists just getting into the field. So there should be cooperation.

Mr. GREGG. What about the Soviets and the Canadians?

Mr. YOUNG. Interactions between Canada and the United States have been good. We have had good interchange. We have some great differences of opinion, but we have some good interchange.

On the Russian side, until Afghanistan, we had made tremendous progress with the interchange in Alaska and even with the blessing somewhat of the State Department. We have had interchange of people, primarily with the reindeer herd, for instance. We have had reindeer in the Arctic up to 400,000 and because of probably, I would say, yes, mismanagement, it went down. Now the herd is going back up and we have had a lot of our Eskimo leaders, quite a few, go to Russia and interchange ideas. Reindeer is their largest single red meat contributor to Russia.

So we have got some of their information, how they can improve and what can be done with the natural forage. We have had cultural exchanges. At one time we had an airline flying into the Arctic. Arctic airlines flew into Russia. There is an interest in Siberia. I may be speaking out of turn, but there is an interest in Siberia with Alaska and Russia because we have similar problems. We have not only climatic problems, but we have distance problems.

I say again, with respect—Arctic and Washington are very similar to Moscow and Siberia. The distance, the misunderstanding, the reputation—you are being sent to Siberia—how many times have you heard it. You hear this still in Russia. It contributes the major source of gas, contributes to this like we do—the major source of oil. So we have this need for an interchange between Russia and Alaska, and we also have relations on the little island. You just about throw a rock across to Russia, yet we can't have exchange. They are related—uncles, aunts, brothers and sisters. It is that close.

So there is a necessity for understanding with Siberia. We would feel much safer if we had a relationship with Siberia as far as any future conflict, because the direction out of Moscow sometimes doesn't understand the closeness of proximity as far as a relationship to Siberia, to Russia.

Mr. GREGG. That is interesting. I wouldn't mind being sent to Alaska.

Mr. YOUNG. You know, one of the unfortunate facts is that we have trips to Tokyo and Korea and Germany and things like that, and the only time that I can get a trip put together, is in the summertime and I know we are all busy in the summer, we have other things to worry about, constituents' problems, et cetera.

It is a long way. What we are trying to do—this is on the record, Mr. Chairman—I am trying to convince the Governor and the legislature that there are 157 Congressmen and Senators who went through Alaska last year, but they went through it, they didn't stop other than to put fuel in the airplane—like Secretary Shultz the other day. I would like to have them stay on the way back from the Asiatic Conference for at least 4 or 5 days as guests of the State.

We are working having an invitation given to you with your wife, if you would become guests of the State, otherwise at mercy of the State. They could show you the State as they wished to show it to you. You get your way paid back to the District of Columbia. That is something that would be the most advantageous thing because one of the most difficult things we have in this Congress and the United States, as far as the constituency which you serve is the understanding.

How many times have you opened a geography book and talked about scientific community, or in high school or elementary school where they teach geography, and still see an igloo? That never existed in the State of Alaska. Never existed. The good mayor of Barrow may say an igloo would be there, but—I don't want to differ with him because he knows better than I do—but I have never seen, I have never heard of one, I have heard of dugouts, but the igloo is a Greenland institution.

But the reputation—I have had people, when I give them my credit card—Visa card—say, "so you have those in Alaska, too."

And so the information that is necessary, that I would like to have you participate in, is coming to the State, seeing the State and understanding what we are trying to do, just not in the lower part of the State, in Anchorage, but in the Arctic where the activity is really taking place.

Mr. **Gregg**. I will take you up on that.

I was wondering about the issue of State people serving on this. I noticed you have got the Governor appointing two or nominating two. Are you going to limit that to people from Alaska? I assume the Governor wouldn't nominate anybody outside of Alaska?

Mr. **Young**. I don't believe it specifically states they have to be from Alaska. It is like the commission set up from the National Marine and Fisheries Commission. The Governor can appoint three members, I believe, and it can be his discretion. They can be outside the State. I would suggest he won't do that, but he could possibly do it. Again, if we don't contribute the money, he loses his right to appoint.

Mr. **Gregg**. The Commission should have some requirement that Alaskans be serving on the Commission in some percentage.

Mr. **Young**. Well, in all respect, we hope that that will occur. If you want to write it in, I certainly would have no objection to it, I would love it. This is a national policy commission, and I think the Governor, in his wisdom, would definitely appoint Alaskans. I would suggest it would be very, very appropriate too, if some of the indigenous people could not—this is the difficulty. When you write this into law—we have tried this before—if one of the indigenous people or two of them, or whatever he could appoint—could come from that area. I think it is vitally interested, as I understand it, in the historical aspect of the people that live there over the years should have a great deal of participation in this Commission.

Mr. **Gregg**. That is one of the problems I have with the Federal Government administering a place like Alaska. The fact that it is getting administered from Washington, which, as I say, has no real good sensitivity to Alaska. It seems to me we ought to probably consider putting something in the Council that would make sure that there is at least some local flavor to the organization, no matter what happens.

Mr. **Young**. I am deeply touched because I would like to see that again. This is discretion in the wisdom of the committee, to see that that is done.

Mr. **Gregg**. I congratulate you on the bill. I happen to agree it should be a separate policy function, as you have suggested. I think that it is such a significant area from a scientific standpoint and from a resource standpoint, that it deserves a separate treatment and should be structured that way.

Mr. **Young**. Thank you.

Mr. **Gregg**. Thank you, Mr. Chairman.

Mr. **Walgren**. You indicated that with respect to the participation of the indigenous people you felt the bill was a little weak in that area. We ought to ask for some direct submission of any thoughts you might have in that or other areas that you feel the committee ought to be thinking about to improve the bill from your point of view.

Mr. **Young**. Mr. Chairman, we would gladly do that, and I want to stress again that it is one of the most difficult factors when you write into law, who shall participate. But I think it is important, as Congressman Gregg mentioned, that we do recognize that we are dealing with people's lives that have historically resided in those areas, and contrary to the Antarctic, they are vitally concerned and they want to be participants in such a commission, not necessarily for the prestige, but for the contribution that they can make historically.

Sometimes the scientists have a tendency—not intentional—to overlook because they still can't relate to concepts and ideas that are ingrained over the years and years and years. So if you can do this I will offer the suggestions to you.

This is Senator Murkowski's bill. It has passed the Senate. He will work with you closely in every way, so if you or your staff or anybody have some inquiries, ask us, and we will gladly get back to you with anything we think can improve the bill.

Mr. **Walgren**. Would you yield at that point?

Mr. **Gregg**. Would it be agreeable to you if we were to say that the two people appointed by the Governor are to be Alaskans and that one of them shall be indigenous? Would that be a——

Mr. **Young**. Off the top of my head, that is fine. I would have to look at the ramifications. The problem we are going to have, when I say it is hard to write, when we say indigenous people, there is basically three different groups of indigenous historical people in the area and I want to avoid specifically mentioning any one of the groups.

Mr. **Gregg**. We will leave that to the Governor.

Mr. **Young**. I like that.

Mr. **Skeen**. I thank you for your indulgence.

Don, I have been told that a similar bill was developed, or some kind of agency under which an international joint commission was formulated in the Great Lakes area, with Canada. That has worked extremely well and it was probably the offshoot of something like this, or this kind of directive. If it came by a bill, I don't know that it did. I am sure we will hear from some of the witnesses this morning on the Government side of the issue, about how these agreements have worked. Evidently it has worked extremely well.

One other point regarding your bill; I know you are not trying to direct any international agreements or anything like that, you are suggesting a policy base from which you can spring into these. I think it is an extremely important and strong part of your bill.

Mr. WALGREN. Mr. Boehlert.

Mr. BOEHLERT. No questions.

Mr. WALGREN. Mr. Valentine.

Mr. VALENTINE. I don't have any questions.

Mr. WALGREN. Well, on behalf of the committee, let me thank you very much for joining us and we look forward to talking to you about this as the hearings develop and we develop some knowledge of what the situation is. I personally have very little knowledge, and have to approach it from that level.

Mr. YOUNG. Thank you very much. I again thank you for your kind hospitality. This is a very important issue in the State of Alaska and it is more important for the Nation and the international scene.

Thank you for at least having these hearings and again I say, Alaska, it has been very rapidly—remember we passed the bill over from the Senate last year during the lameduck session 1 hour before it was over. I want to compliment you for having this hearing at this time and as far as you have been able to.

Mr. WALGREN. Thank you very much.

The next panel is representatives from various Federal agencies with contact in this area, Mr. Tucker Scully, Director, Office of Ocean and Polar Affairs, Department of State; Dr. Ned A. Ostenso, Acting Assistant Administrator for Research and Development, National Oceanic and Atmospheric Administration; and Dr. Edward P. Todd, Director, Division of Polar Programs, National Science Foundation.

STATEMENTS OF R. TUCKER SCULLY, DIRECTOR, OFFICE OF OCEAN AND POLAR AFFAIRS, DEPARTMENT OF STATE; WILLIAM P. HORN, DEPUTY UNDER SECRETARY, DEPARTMENT OF THE INTERIOR; NED A. OSTENSO, ACTING ASSISTANT ADMINISTRATOR, RESEARCH AND DEVELOPMENT, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION; AND EDWARD P. TODD, DIRECTOR, DIVISION OF POLAR PROGRAMS, NATIONAL SCIENCE FOUNDATION

Mr. WALGREN. Let's start in the order I called you. First, Mr. Scully.

Mr. SCULLY. I am here before the subcommittee to present a statement on behalf of Assistant Secretary of State James Malone, who is the chairman of the Interagency Arctic Policy Group. I am very pleased to be here.

I convey Assistant Secretary Malone's regret he had to be out of the country during this time period. As the chairman indicated, we have, in fact, presented our statement—Assistant Secretary Malone's statement for the record and I will try to briefly summarize the remarks and would be pleased to try to answer any questions that relate to the content of the testimony or other issues which have been addressed during the session.

There are two basic aspects of the statement. In response to the subcommittee's request, we are addressing the question of the Interagency Policy Group, which is the interagency mechanism available for the coordination of arctic policy and, of course, the legislation which is before us, H.R. 2292.

With regard to the Interagency Arctic Policy Group—perhaps a somewhat elusive group—that Policy Group, which is chaired by the Department of State and involves all interested Federal agencies, was originally established in 1971. The group was not particularly active during the seventies, and it has only been in recent years that the institution, the mechanism, has been reactivated. Also, as Mr. Walgren indicated earlier, the question of arctic policy was addressed in a directive issued by President Reagan in April of this year.

In that directive, the Interagency Arctic Policy Group, which reports to the National Security Council, is responsible for reviewing and coordinating U.S. international activities and programs in the Arctic.

The directive, however, provides that those responsibilities of the Interagency Arctic Policy Group do not include purely domestic matters. So I think there is an international flavor to the IAPG as it is called, although a recognition that it is impossible to make any hard and fast division between what are the international aspects of arctic policy and what are its domestic aspects. We do have a copy of President Reagan's directive for the record if that would be of assistance to the subcommittee.

One of the major elements of arctic policy which is addressed in the directive of April relates to the promotion of scientific research—as the directive says, scientific research in fields contributing to knowledge of the arctic environment, or aspects of science which are most advantageously studied in the Arctic. Therefore, I think President Reagan's directive recognizes in the mandate for the IAPG that the question of science policy, arctic science policy, is an important element in overall arctic policy.

With regard to President Reagan's directive of April, there are two other aspects which are significant here. The directive called upon the policy group to conduct two studies, directed studies. The first relates to the assessment of the services which will be required of the Federal Government to support activities in the Arctic over the next decade, recognizing that most of those activities, or many of those activities will lie in the private sector, particularly in the resource area.

Second, the directive called upon the Policy Group to study the question of possible opportunities for international cooperation in the Arctic. Here again, I think that this recognizes growing interdependence in the area, a point which Congressman Young stressed very forcefully. In looking at opportunities for possible international cooperation in the Arctic, one is obviously, I think, going to be seeing cooperation in scientific activity as an important field of study at least.

It should be noted that the Policy Group does not involve itself, it is not charged with involving itself with funding of arctic research or in fact, the implementation of research programs. There has been from time to time, among the Federal agencies, a variety of efforts to insure coordination of arctic research activities, but these I think generally have been of a relatively ad hoc nature and have not themselves delved into the policy area, the area of overall science policy or overall arctic policy, for that matter.

This brings me, Mr. Chairman, to the question of our views on the Arctic Research and Policy Act of 1983, H.R. 2292. I would summarize our views very briefly, and we certainly would be prepared to try to address any more specific questions.

First, I think I would simply say that the Department of State supports the enactment of H.R. 2292. We believe that it would provide an impetus, a welcome impetus for shaping a more active and informed U.S. arctic prospective, one that is circumpolar in scope, and would serve to reemphasize the U.S. commitment to seeking coordinated goal oriented scientific research in the Arctic.

The question has been raised of the relationship between the legislation, H.R. 2292, and the Interagency Arctic Policy Group. We see no inconsistency between the two. We do not see them as alternatives. As I noted, we think the directive which the President issued relating to the Policy Group, makes a very specific point of the important science and science policy to our overall arctic policy. We would hope there would be a complementary quality between the activities the Policy Group will be conducting and the activities foreseen under H.R. 2292.

In addressing this point, it might be possible to make the legislation a bit more specific in terms of providing for coordination, providing for cooperation between the institutions and the mechanisms established in the bill and the international agency policy mechanism [IAPG] that deals with overall arctic policy.

Finally, another suggestion we would note at this stage of the game is that it might well be desirable to look at the composition of the Arctic Policy Council, which is provided for in the legislation, and to consider including representation on that Council of all the Federal agencies involved. Recognizing that if one of the important aspects of the machinery is to coordinate U.S. science policy, U.S. arctic science policy, it might be useful to consider more specific representation for the agencies which have a direct interest in scientific activity in the Arctic.

On that note, I would end this summary and would be prepared to try to address any questions the committee may have after the presentations of my colleagues.

[The prepared statement of Mr. Scully follows:]

Statement of James L. Malone, Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs; Given by R. Tucker Scully, Director, Office of Oceans and Polar Affairs

I am pleased to appear before the Committee today to discuss the role the Interagency Arctic Policy Group plays in the formulation and implementation of U.S. domestic and international policies as they relate to research in the Arctic. In addition, I will provide the Department of State's views on the Arctic Research and Policy Act of 1983 (H.R. 2292).

The Interagency Arctic Policy Group (IAPG), which I chair, was established by National Security Decision Memorandum (NSDM) 144 of December 12, 1971. The IAPG includes representatives from the Departments of Defense, Interior, Commerce and Transportation, as well as the National Science Foundation, the Council on Environmental Quality, and other agencies as appropriate. As recently as April 14 of this year the role of the IAPG was reaffirmed by National Security Decision Directive 90 concerning U.S. arctic policy. As stated in NSDD 90, the IAPG is responsible for reviewing and coordinating implementation of U.S. arctic policy and U.S. international activities and programs in the Arctic. These responsibilities will not include purely domestic matters. However, the IAPG will ensure close consultation with agencies concerned with the those domestic matters.

One of the major elements of U.S. arctic policy set forth in NSDD 90 specifies the promotion of "scientific research in fields contributing to knowledge of the arctic environment or of aspects of science which are most advantageously studied in the Arctic." Therefore, there is a mandate for the IAPG to concern itself with arctic science policy as well as other aspects of U.S. policy in the Arctic. NSDD 90 requests two policy reviews. The first concerns assessment of federal services which the United States might find necessary to provide in the arctic region over the next decade, recognizing that resource development is primarily a private sector activity. The second requested policy review is more pertinent to this meeting, for it deals with possible future international cooperation in the Arctic. An important aspect of this is potential cooperation in Arctic science. The IAPG intends to examine this possibility.

The IAPG has already made some suggestions in the realm of arctic science policy. In a paper forwarded to the National Security Council on October 22, 1982, the IAPG, among other assessments, identified certain research areas important to U.S. arctic interests and peoples in view of anticipated energy development in the Arctic. These are arctic sea floor engineering, storm surges, sea ice dynamics, the marginal zone at the edge of the ice pack, the effect of air pollution on the Arctic and the world weather system, the effect of oil spills on both open and ice-covered sea areas in the Arctic, and the effect of pollutants on arctic marine and avian stocks. Furthermore, the review paper stated, "It is widely believed to be in the national interest to expand such research activities to include joint cooperation and coordination with other arctic states, especially but not exclusively, with Canada."

It should be noted that the IAPG does not address funding for specific arctic research or implementation of such research. Staff representatives of the IAPG agencies, among others, do meet periodically in another forum to discuss arctic research. These interagency arctic research meetings under the leadership of the National Science Foundation provide useful opportunities for discussion of research programs and trends. However, their effectiveness in coordinating arctic research is limited, and their authority to set policy is nil.

This brings me to the second part of my discussion: Department of State views on the Arctic Research and Policy Act of 1983 (H.R.2292). It may be fairly inferred from what I have just said that the State Department is not entirely satisfied with the existing mechanisms for the formulation and implementation of arctic research policy. The IAPG, of course, has a broader mandate than arctic research pre se and has been fully engaged in tasks of political, socio-economic, and environmental concern in the Arctic. On the other hand, the periodic inter-agency arctic research meetings called by the National Science Foundation are primarily for information exchange about ongoing research. They provide no guidance for a coherent, long-term arctic research policy, no machinery to direct its implementation, and no financial resources to underwrite it.

In this connection, it is appropriate to note the words of NSDD 90: "It is clear that the United States has unique and critical interests in the arctic region related directly to national defense, resource and energy development, scientific inquiry, and environmental protection. In light of the region's growing importance, it warrants priority attention by the United States." This is strong, affirmative language. There is a corollary that could be stated as follows: vigorous encouragement of scientific research in the Arctic is essential, both to expand our general knowledge and to assure rational development in this new frontier.

The Department of State believes H.R. 2292 will provide a welcome impetus for shaping a more active and informed U.S. arctic perspective, one that is circumpolar in compass. It will serve to re-emphasize the U.S. commitment to seeking coordinated, goal-oriented scientific research in the Arctic. It will also provide the resources to carry this out.

We urge that final language of the bill explicitly avoid overlap between the responsibilities of the proposed Arctic Science Policy Council and those of the Interagency Arctic Policy Group.

Also, if centralized direction of our applied research in the Arctic is desirable—as some feel it is—then it is our opinion that the proposed Arctic Science Policy Council should be enlarged enough so as to provide the representation and balance needed for its effective operation. To be specific, the Council now proposed includes only two Presidential appointees chosen from among nominees of seven federal agencies. All seven agencies have important interests in the circumpolar Arctic and research going on there. We believe the legitimate special interest of the State of Alaska can still be adequately represented if the Council is made large enough to include one qualified representative from each of the seven federal agencies named. This would have the additional advantage of facilitiating the coordination of all U.S arctic research planning and implementation. It would also help promote, in coordination with the IAPG, appropriate scientific cooperation with other nations in the Arctic.

Mr. MacKay [presiding]. Mr. William Horn, Deputy Under Secretary, Department of the Interior.

Mr. Horn. Thank you, Mr. Chairman.

My name is William Horn, Deputy Under Secretary of the Department of the Interior. I am pleased to appear today on behalf of the Department to discuss H.R. 2292. We believe there is a strong need for continued research in the Arctic. The area is ecologically important and our understanding of it is not complete and these factors, coupled with the vast economic potential of that area, demand that special attention be paid to the Arctic.

Because the goals and objectives outlined in the legislation are shared by the Department of the Interior, we support enactment of H.R. 2292. The Department has a particularly keen and abiding interest in the Arctic. By virtue of our major land management activities we are the dominant landowner north of the Arctic Circle. We administer five units of the national park system, the largest unit of the national wildlife refuge system, a 23-million-acre petroleum reserve, and the Outer Continental Shelf, Beaufort and Chukchi all fall within the Department's purview, of course, all of which are not of the Arctic Circle.

Because of our major land management presence in the area, we do have internally our own major arctic research efforts throughout the various divisions within the Department. My prepared statement lists some of these particular activities. With the committee's indulgence, I would like to note a couple of them:

To give you some flavor of what the management and research activities we are pursuing, pursuant to the Outer Continental Shelf management program, our Mineral Management Service operates a very complete OCS research program. Fifty-two percent of the studies funded by our entire OCS research program have been folks used in the Alaska OCS region and the cumulative funding for that program since 1973 has been $168 million.

We have developed considerable expertise and considerable base data regarding the resources of the Arctic OCS. Fish and wildlife research is another very active area in the Arctic. Current Alaska research activities conducted by the service now total over $1.2 million and we focus primarily on migratory birds, large mammals such as bear, caribou, and moose, anadromous fish, such as salmon and char. On occasion, we run a whole range of programs, hydrology by Geological Survey, mineral assessment and cultural studies and such, particularly in the whale area.

I would make one special note regarding the bill per se, and that is that we are very pleased that there is a particular section on State participation. We think it is important that the State be involved. Because of our major land management and land holding in

Alaska, we have taken particular emphasis to try to be a good neighbor with Alaska and coordinate our efforts to the maximum extent possible with them, and we think that should the Federal Government get into a major effort in coordinating and developing, our research and developing arctic policy, that we think it is absolutely critical that the State of Alaska, that will be impacted by these efforts, be intimately involved.

In conclusion, let me say we do support the bill. We think that it will focus Federal efforts and attention on the Arctic. We think it will facilitate coordinated research and, lastly—we have a somewhat in-house, selfish motive—we believe additional research particularly will help us be better land managers and provide better for resource management in the area for the benefit of the public.

Thank you.

[The prepared statement Mr. Horn follows:]

STATEMENT OF WILLIAM P. HORN
DEPUTY UNDER SECRETARY, DEPARTMENT OF THE INTERIOR
BEFORE THE
SUBCOMMITTEE ON SCIENCE, RESEARCH, AND TECHNOLOGY
OF THE
COMMITTEE ON SCIENCE AND TECHNOLOGY
HOUSE OF REPRESENTATIVES

June 28, 1983

Mr. Chairman, Members of the Subcommittee, I am pleased to appear today to discuss H.R. 2292, "The Arctic Research and Policy Act of 1983". The issues which prompted the introduction of this legislation generate considerable interest among scientists, administrators and policymakers, and we appreciate your leadership in this important area.

We have given this legislation careful consideration, and I would like to share with the Subcommittee some of our thoughts on the bill and on Arctic research generally. We believe there is a strong need for continued research in the Arctic. The area is ecologically important and our understanding of it is not complete. These factors, coupled with the vast economic potential of the region, demand that special attention be paid to the Arctic.

The goals and objectives outlined in the legislation are shared by the Department of the Interior. We therefore support enactment of H.R. 2292.

We feel that it is vital that the results of Arctic research by various agencies be made available to both Federal and non-Federal organizations. Arctic research conducted by the bureaus in the Department of the Interior has contributed greatly to our knowledge of the Arctic region, and facilitates the task of managing Arctic resources. For example, this Department alone has spent over $10 million a year in recent years on a wide variety of Arctic research efforts. Included in this total are studies of Bowhead Whales, Eskimo cultures, caribou habitats, glaciology, and technologies for remote sensing of minerals; baseline wildlife studies on the Coastal Plain of the Arctic National Wildlife Refuge; energy and mineral assessments; and the onshore effects of exploration and development activities. Other departments are conducting additional studies. The Department of the Interior places a high priority on its activities in Alaska and in the Arctic, many of which are supported by these types of research.

OUTER CONTINENTAL SHELF (OCS) ENVIRONMENTAL STUDIES PROGRAM

The Minerals Management Service (MMS) manages the Outer Continental Shelf (OCS) Environmental Studies Program, which was initiated in 1973 "to establish information needed for prediction, assessment and management of impacts on the human, marine and coastal environments which may be affected by OCS oil and gas activities". (section 20, Outer Continental Shelf Lands Act Amendments of 1978.) Fifty-two percent of the studies funded by this program since that time have been conducted in the Alaska OCS region. The cumulative funding since 1973 is approximately $168 million.

The cost of studies nominated for funding during any fiscal year has historically exceeded available funds. Therefore, a set of ranking criteria has been designed to establish the priority of each study on the National Studies List. The five criteria include: (1) importance of the information to the decision-maker; (2) date of the decision for which the study is designed; (3) generic applicability of results or techniques from the study; (4) status of the information; and (5) applicability of the study to issues of regional or programmatic concern. An assessment of information needs and development of environmental studies is conducted annually.

Following submission of Final Regional Study Plans by the OCS Regions, the Branch of Environmental Studies compiles the preliminary National Studies List which includes all studies proposed for funding. The same Branch then reviews the list and arranges the proposed studies in order of their national significance using the ranking criteria. The National Studies List is reviewed and approved by the OCS Regions and submitted to headquarters for formal approval. After the study is procured, the OCS Region monitors the contractor's performance until the research is completed.

TECHNOLOGY AND ASSESSMENT RESEARCH PROGRAM

The Technology and Assessment Research Program of the Minerals Management Service supports, in conjunction with industry and educational institutions, the following research directed toward the Arctic environment: (1) structural materials for Arctic operations; (2) mechanical properties of sea ice; (3) ice forces against Arctic structures; (4) behavior of concrete offshore structures in cold regions; (5) superstructure icing data collection and analysis; and (6) subfreezing testing of oil spill containment and cleanup equipment. The funding level for this program in Fiscal Year 1983 is approximately $432,000.

FISH AND WILDLIFE SERVICE RESEARCH

Current Alaska research activities conducted by the Fish and Wildife Service total approximately $1,252,000. Studies are concentrated on migratory birds, marine mammals, selected upland big game animals, and fisheries. Of the total, $400,000 is utilized in migratory studies designed to answer questions related to seabird population ecology, endangered Aleutian Island geese, and other nonhuntable geese. Work on marine mammals totaling $325,000 is concentrated on polar bears, sea otters, and walruses. The upland big game research totals $215,000 and involves studies associated with the ecology and distribution of brown bears, barren ground caribou, and moose. Additional studies on the porcupine caribou held on the Artic National Wildlife Refuge are being performed for sections 306 and 1002 of ANILCA totalling $137,000 and involve studies associated with caribou/brown bear interactions on the calving grounds, habitat classification and mapping of the calving grounds, recurring surveys, and calf mortality on the calving grounds of the refuge. Fisheries studies of $225,000 are concentrated on salmon located on Service refuge lands.

WHALE STUDIES

During the past five years the MMS has conducted an aerial survey of the Bowhead Whales in the Beaufort Sea as a part of their Environmental Studies Program. The purpose of the survey has been to study the movement and population size of the whales. Another ongoing MMS investigation has focused on the Beluga Whales in the coastal waters of Alaska with an emphasis on the effects of noise disturbance on these whales. Other studies include: (1) computer simulation of the probability of endangered whales interacting with an oil spill; (2) possible effects of acoustic stimuli on Bowhead Whales; (3) the effect of noise on Gray Whales; and (4) the development of satellite linked methods for tagging and tracking large cetaceans.

GEOLOGICAL AND GEOGRAPHIC EXPLORATION OF THE OUTER CONTINENTAL SHELF

Pursuant to the Outer Continental Shelf Lands Act, the MMS oversees a program to issue permits for the collection of geological and geophysical data not authorized under a lease agreement. These activities may take place on unleased lands or on lands under lease to a third party.

The Alaskan OCS has been the target of extensive geological and geophysical data-gathering surveys over many years by industry groups operating under Federal permits and by the U.S. Geological Survey. The major features of many large sedimentary basins on the Alaskan shelf have been delineated because of these surveys. The July 1982 five-year OCS lease sale schedule indicates plans for offering most of these basins for future oil and gas exploration and development.

In order to conduct geological or geophysical exploration or scientific research on the OCS, a "person", as defined in the regulations governing this program (30 CFR 251), must file with the appropriate OCS Region of the MMS an application for a permit and agreement for Outer Continental Shelf exploration for mineral resources or scientific research. The application includes the expected commencement and completion dates. When the MMS approves the application, it issues an exploration permit and agreement. These permits include an approval of the proposed geological or geophysical activities, stipulations, and other requirements, including inspection, submittal of, reimbursement for and release of data and information by or to the MMS.

In fiscal year 1983, in the Arctic Region, 21 permits have been issued for exploration of the Beaufort Sea and 6 have been issued for the Chukchi Sea. (Funding levels: FY 1982, $1,401,205; FY 1983, $1,938,360 (estimated).)

A series of ten pre-lease exploratory deep stratigraphic test wells have been drilled on the Alaskan OCS under Federal permits through the Continental Offshore Stratigraphic Test (COST) well program. These wells were completed in the Gulf of Alaska, Lower Cook Inlet, Kodiak, St. George, Norton and North Aleutian shelf areas. In addition, six core holes were drilled on the Kodiak shelf. A deep stratigraphic test well is currently being drilled in the Navarin basin which will add substantially to our geological knowledge of the Alaskan shelf.

NATIONAL PETROLEUM RESERVE - ALASKA STUDIES

The Naval Petroleum Reserves Production Act of 1976 directed the Secretary of the Interior to "establish a task force to conduct a study to determine the values of and best uses for, the lands contained in the reserve, taking into consideration (A) the natives who live or depend upon such lands, (B) the scenic, historical, recreational, fish and wildlife, and wilderness values, (C) mineral potential, and (D) other values of such lands." (section 105(c)(1)) The 105(c) report excluded oil and gas development because it was the subject of another mandated study (section 105(b)).

The 105(c) task force prepared numerous studies covering the physical, socio-economic, ecological and regional factors necessary to make land use recommendations. In addition, an extensive public record was maintained to document comments to task force reports. The Native (Inupiat) view was the subject of a specific study. All of the studies were then utilized in developing the task force final recommendation for land use decisions. In 1979, the Department of the Interior transmitted the task force report to the Congress.

Through extensive research programs the United States Geological Survey has broadened the scientific knowledge necessary for future Arctic development.

ALASKA MINERAL RESOURCE ASSESSMENT PROGRAM

One of the most successful USGS efforts is the Alaska Mineral Resource Assessment Program (AMRAP). Under the AMRAP program mineral resource assessments are being conducted in a large part of the Alaskan Arctic. These assessments include stratigraphic and sedimentological, geological, geochemical and geophysical studies of large areas to determine the types and estimate the quantities of minerals and oil and gas to be found in the areas under study. The information the USGS will analyze and interpret from these studies will be a vital factor in future resource evaluation decisions by the Government and private sector.

ARCTIC ENVIRONMENTAL STUDIES

The USGS is also conducting systematic assessments of the ice-rich permafrost terrain in key transportation/development areas in Alaska. These studies will result in a permafrost map and report. USGS is investigating and mapping landslide features and other engineering hazards in the Arctic which will enable better planning in future activities in the Arctic. The results of these studies will allow future developers to build sound structures and support facilities to withstand the harsh Arctic environment. In addition, knowledge of permafrost movement gained by USGS scientists will minimize mitigation capabilities so that the private sector can successfully plan transportation facilities such as roads, pipelines and airstrips.

HYDROLOGICAL RESEARCH

The USGS has several ongoing projects basic to a fundamental understanding of the hydrology of the Arctic. The study of glaciology which is intricately tied to developments in meterorological activities and climatic changes is basic for successful economic development of the Arctic region. USGS programs which examine water resources are playing an increasingly important role in Arctic studies. These programs, among other USGS Arctic endeavors, are critical steps in the path which will lead to the future development of the mineral resources of the Arctic.

STATE PARTICIPATION

In addition to providing this Subcommittee with descriptions of our Arctic research activities we would like to emphasize our support of section 9, which provides for a significant financial contribution by the State. It is important that the State of Alaska be included as a major participant in any research activities conducted in the Arctic. Alaska will greatly benefit from these activities. We therefore believe strongly that the State should play a major role in managing Arctic research programs in addition to sharing in the financial responsibility. We hope that Alaska would elect to participate in the activities of the Arctic Research and Policy Council and the Arctic Research Commission as provided for in section 9.

In summary, we view this legislation as formalizing the coordination process in the vital research activities of the United States in the Arctic. It will also give us the opportunity to work more closely with the State of Alaska in developing the data base which will facilitate the prudent development of Arctic resources.

Mr. Chairman, this completes my statement. I would be happy to answer any questions you may have.

Mr. MacKay. Thank you.

Dr. Ned Ostenso, Acting Assistant Administrator, Research and Development, National Oceanic and Atmospheric Administration.

Dr. Ostenso. Thank you, Mr. MacKay.

I am particularly pleased to be here representing the Department of Commerce, because I spent some 15 years of my professional life working in the Arctic, Greenland, and Antarctica. I also, incidentally, happen to be president of the American Polar Society, although I don't purport to be representing that group in this testimony.

I have structured my prepared testimony to answer the three questions in the letter of invitation—that is, to review briefly NOAA's current research activities in the Arctic, to address the matter of interagency coordination of arctic research, and finally, to comment specifically on H.R. 2292.

Over the last couple of decades, we have begun to appreciate the enormous importance that the Arctic has in determining the long term climatic trend, interseasonal climatic variability, seasonal weather patterns, and also the chemical health, and atmosphere.

The arctic ice cover is salient in determining the exchanges of energy and aerosol interactions between the atmosphere and the ocean. Accordingly it is not surprising that NOAA has a persuasive interest in arctic environmental research. I will highlight some of this. It is developed further in my prepared testimony.

In cooperation with the National Science Foundation and the Office of Naval Research, with the substantial participation of Norway and Canada, we maintain a buoy network in the arctic icepack to monitor the dynamics of the pack and to monitor the atmospheric pressure field. These data are terribly germane to forecasting the weather that affects all of North America and indeed all of the world.

Checking these data we have recently made a commitment to continue this program for at least the next 5 years. My guess is it will go on much longer than that.

With the National Weather Service, and the National Satellite Data and Information Service, and the Department of Defense—we jointly sponsor the Navy—NOAA Joint Ice Center. This is the facility that provides long-range ice forecasts for both the Arctic and the Antarctic.

Under the leadership of the Office of Naval Research, and with the participation of NSF, we are involved in a major experiment in the Arctic called a Marginal Ice Zone Experiment, which is measuring the dynamics and kinomatics of the ice, air-sea interaction and carbon dioxide pollution between the ocean and atmosphere which is key to the greenhouse effect that affects global climate.

We also develop a number of numerical models that determine not only the dynamics of the ice cover but related dynamics of overlying atmosphere.

At Barrow we have maintained for years, and will continue to maintain, an observatory that is part of a global sector, the southern end of which is at the South Pole, that monitors the geophysical effects of certain aerosols and elements in the atmosphere as they effect climate, such as carbon dioxide, methane, ozone, and so forth. This work is so key to understanding man's inadvertent impact on climate that this program is part of the international World Meteorological Organization.

Another major program is sampling gasses and aerosols over the Arctic. By way of anecdote, a few weeks ago we completed a series of flights over the Central Arctic Basin, collecting air samples. They smelled fire in the airplane and they went to emergency alert for damage control. It wasn't until later they realized what they were smelling was actually the outside polluted atmosphere that we thought was pristine Arctic air.

In the area of biology, we have a substantial program through our NOAA office of marine mammals, working cooperatively with the University of Alaska, where we are studying the bowhead whales and the hunting habits of the Inuits.

The sea grant program has about a $1.5 million a year program at the University of Alaska, where they are studying mainly the living resources of Alaska offshore waters. This benefits not only Alaska directly but the Western States who fish in Alaskan waters, and indirectly has a major impact on the economy of the whole Nation.

Also, through this program, we have developed a fisheries technological institute at Kodiak, where we are training people in fishery skills.

With the cooperation of the Department of the Interior, we operate for them what we call the OCSEAP program—the Outer Continental Shelf environmental assessment program—that is keyed to the offshore oil leasing. This has been a long-term program of substantial size. It has run as high as $22 million a year. It is now funded through the Department of the Interior at the $9.3 million level. We are working primarily in the areas of the Beaufort-Chukchi-Bering Seas.

The National Ocean Service, through its coastal zone management program supports a substantial effort in cooperation with the State of Alaska under section 306 of the Coastal Zone Management Act, to better understand and prepare for the development of Alaskan resources. Last year this was funded at the total of $2.5 million.

With the University of Alaska and the University of Virginia jointly, we are sponsoring a major study in the strategic assessment of Bering, Chuckchi, and Beaufort Sea offshore resources. From this snapshot of our various activities—it is not a complete list—I want to make the point that at the working scientist level, the cooperation and coordination of our activities is fairly substantial. This doesn't mean that there is not always room for improvement and it does not expressly address the major issues in coordination at the policy level that we feel needs strengthening.

Addressing specifically H.R. 2292, we note with pleasure that the bill does support President Reagan's directive of April 14 of this year which has four points to it: One is protection of essential security interests in the Arctic, support of sound and rational development of the Arctic, promotion of scientific research and promotion of mutually beneficial international cooperation. We feel these four elements are so inexorably intertwined that you can't separate them or address them individually.

We would comment, though, on certain areas where we feel that the proposed legislation might be strengthened. One is the possibility for confusion between the Council and the Commission and suggest that this could prove to be an unnecessarily elaborate arrangement and question whether or not this coordination couldn't be effected by one council taking into greater consideration the existing mechanisms that we already have for coordinating Arctic information, such as the National Snow and Ice Data Center at Boulder, Colo., which is part of our National Environmental Data Center network.

Also, recognizing the National Ocean Pollution Planning Act—that is Public Law 95-273—set up a coordinating mechanism for ocean pollution in the Arctic.

More specifically, we are seriously concerned about limiting the term of Council members to 2 years. We feel that is simply too short a time for them to develop the expertise and working arrangements to be effective and would urge that their term should be more like 4 years with at least one option for reappointing them for a second term.

Finally, we have doubts about whether or not the administrative structure can be set in place fast enough to appropriately handle funding at the $25 million level by fiscal year 1985 and suggest that funding for the program may be phased in in a more gradual manner.

That is the extent of my testimony and I will stand by for any questions you may have.

[The prepared statement of Dr. Ostenso follows:]

STATEMENT
OF
DR. NED OSTENSO
ACTING ASSISTANT ADMINISTRATOR FOR OCEANIC
AND ATMOSPHERIC RESEARCH

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

BEFORE THE

SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY
COMMITTEE ON SCIENCE AND TECHNOLOGY

HOUSE OF REPRESENTATIVES

JUNE 28, 1983

H.R. 2292

Mr. Chairman and Members of the Subcommittee:

I am Ned Ostenso and I serve as the Acting Assistant Administrator for Oceanic and Atmospheric Research of the National Oceanic and Atmospheric Administration (NOAA). I am pleased to be here today to talk about NOAA's arctic research activities and to comment on H.R. 2292, the Arctic Research and Policy Act. I had the privilege of spending a part of my professional life in the polar regions and, therefore, have a special interest in this subject.

In accordance with the Subcommittee's letter of invitation, I propose to review NOAA's research in the Arctic, address interagency coordination of Arctic research, and submit the Department's views on H.R. 2292.

A. NOAA Research Activities in the Arctic

Ice Dynamics

The significance of polar regions in global interactions of the atmosphere and oceans has become more apparent in recent years. Sea ice tends to amplify changes in atmospheric temperature, providing one of the strongest positive-feedback mechanisms known in the planetary climate system.

-- Commencing in 1979, the United States, through the Polar Science Center at the University of Washington, has maintained [illegible]-20 buoy network in the Arctic as part of the Global Weather Experiment. During the initial year, the NSF and the Office of Naval Research (ONR) funded the program to provide surface pressure and ice movement data from the data-void Arctic Ocean. Because of the success of the system, and National Academy of Science endorsement of its value, NOAA, NSF and ONR agreed to continue the program for five additional years.

During the last three years, various operational and research activities in the public and private sectors of Canada, Norway and the United States have become increasingly reliant on the data from this buoy network. Since 1981, Norway has contributed to the NOAA effort by providing and deploying buoys, and in 1982 Canada became a major contributor and also assisted with buoy deployment.

-- NOAA's National Environmental Satellite, Data and Information Service (NESDIS) is supporting the Navy/NOAA Joint Ice Center, which provides analyses of ice events, forecasts of ice extent and so on.

-- NOAA conducts the Marginal Ice Zone Experiment (MIZEX) to study ice dynamics and kinematics, air-sea interactions, and CO_2 flux processes to understand and forecast ice movement, variations in climate and the potential of the Arctic as a sink for CO_2.

-- NOAA's Pacific Environmental Research Laboratory (PMEL) has completed development of an ice-edge forecasting model for the Bering Sea. Work has begun on a more sophisticated model, which will provide basin-wide estimates of percent of ice cover and ice kinematics. Future tasks will include studies of interannual variability of sea ice extent and circulation.

Climate and Meteorology

-- NOAA maintains an observatory at Barrow, Alaska, one of four sites monitoring atmospheric constituents important for climate change as part of the global monitoring network of the World Meteorological Organization (WMO). In addition, NOAA's National Weather Service in Alaska undertakes a wide variety of observation, collection, evaluation and dissemination activities regarding local climatic and oceanographic phenomena.

-- NOAA also conducts research programs in cooperation with other Federal agencies, universities and foreign governments, such as the Arctic Gases and Aerosols Sampling Program (AGASP) to determine the source, extent and composition of the haze that blankets the Arctic region in winter.

Arctic Biology

-- NOAA's Office of Protected Species and Habitat Conservation conducts marine mammal and endangered species activities in the northwest region of the Arctic Circle, often in conjunction with the University of Alaska. These studies concentrate on the population dynamies of bowhead whales and monitoring of Inunit (Eskimo) bowhead whale hunts.

Sea Grant

-- The National Sea Grant Program provides the University of Alaska about $1.5 million each year for marine research, education and advisory services. The main emphasis of the Alaska Sea Grant Program is on Alaska's living marine resources. The Fishery Industrial Technology Center at Kodiak grew out of a two-year effort by the Alaska Sea Grant Program to establish a unit within the University to address the technological needs of Alaskan fisheries.

Environmental Assessment

-- Since 1975 NOAA has managed the Minerals Management Service's (MMS) Outer Continental Shelf Environmental Assessment Program

(OCSEAP), the largest single government research program in the Arctic. Approximately 200 NOAA personnel participate in this intensive study of nine offshore Alaskan areas. The size and scope of OCSEAP are indicated by the funding, which has ranged approximately from $10 to $23 million. The purpose of OCSEAP is to determine the ability of selected offshore tracts to sustain the potential hazards associated with oil and gas development. OCSEAP reaches into the Beaufort, Chukchi and Bering Seas and their adjacent coastal zones.

Over the past eight years research has been conducted on nearshore ice dynamics, mechanical properties of sea ice, subsea permafrost, earthquakes, sedimentation, currents, oil-spill transport and behavior, ecological studies, nutrient dynamics, distribution and abundance of benthic organisms, and nearshore meteorology, among others. New research efforts are anticipated in many of these disciplines in coming years. This program has required close coordination among the primary agencies, namely, NOAA, MMS, USGS, the State of Alaska and the University of Alaska.

-- NOAA provides important environmental assessment services through its Office of Ocean and Coastal Resource Management (OCRM), National Ocean Service. The OCRM in FY 1982 made grants totaling $2.5 million under Section 305 of the Coastal Zone Management Act to the Alaska Coastal Management Program (ACMP) which, in turn, dispenses funds to local agencies for planning purposes. In addition, the office distributed $2.0 million in Coastal Energy Impact Program funds to Alaska in FY 1982.

B. Interagency Coordination

A major concern of H.R. 2292 is interagency coordination. From NOAA's perspective, we have not encountered any major coordination problems with other Federal agencies while doing research in the Arctic. This is not to say there is no problem in coordination. NOAA is not a major presence in the Arctic region and thus we cannot speak from a larger perspective.

The Interagency Arctic Policy Group (IAPG) has been charged with developing and overseeing implementation of U.S. arctic policy. The President has affirmed that the United States has unique and critical interests in the arctic region. One of the four major elements of the President's program is the promotion of scientific research in fields contributing to knowledge of the Arctic environment. The IAPG is tasked, among other things, with coordinating Federal agency research in the Arctic. I cite these facts in the hope that, as H.R. 2292 makes its way through the legislative process, existing coordinative mechanisms will be taken into account.

C. H.R. 2292

NOAA recognizes the importance of the Arctic to the nation as a whole. H.R. 2292, if enacted, would strengthen our ability to carry out the four elements of the Administration's arctic policy, namely, protection of essential security interests, support for sound and rational development, promotion of scientific research, and encouragement of international cooperation.

Another feature that we like about this bill is the proposed sharing of funding. We fully support the idea of shared Federal/state funding, a concept so successfully employed in the National Sea Grant Program in developing the nation's marine resources.

While NOAA supports H.R. 2292 in general we believe that the bill can be improved. We respectfully suggest that the following comments be considered.

With regard to the Arctic Science Policy Council and the Arctic Research Commission, the proposed structure appears to us as unnecessarily elaborate. There is the risk that in practice the duties of these two bodies would overlap or become confused. Perhaps the structure could be simplified in some fashion, for example, combining the Council and the Commission into one body.

How would existing coordinative bodies, e.g., the Interagency Arctic Policy Group, fit in with the proposed Council/Commission structure? The terms of office of Council members would be two years. Clearly, this is not enough. We suggest four-year terms instead.

Finally, we have serious doubts that the adminstrative structure could be established in time and be prepared to distribute in a responsible manner $25 million (plus whatever amounts may be contributed by the State of Alaska) in research grants in FY 1985. Perhaps a more gradual approach should be taken vis-a-vis the level of appropriations.

With these reservations, NOAA supports this legislation.

Mr. Chairman, this concludes my prepared statement. I will be glad to address your questions.

Mr. MacKay. Thank you, Dr. Ostenso, and now Dr. Edward Todd, Director of the Division of Polar Programs, National Science Foundation.

Dr. Todd. Thank you, Mr. Chairman.

The National Science Foundation is the only Federal agency with responsibility for managing research programs in both the Arctic and Antarctic regions, and by way of introduction to our views on the Arctic Research and Policy Act of 1983 (H.R. 2292), I would like to comment briefly on the dual role of NSF in both the Arctic and Antarctic regions.

Because of the generally limited interests in the Antarctic by U.S. Government agencies, it has been practical to direct a single agency—the National Science Foundation—to serve as manager of the U.S. presence and program in Antarctica. But, because U.S. interests in the Arctic are stronger and more diverse, U.S. policy has been to provide plural support where each agency funds or conducts the basic or applied research that is appropriate to its mission. In fact, it is a measure of the diversified U.S. interests in the Arctic that at least 10 Federal agencies conduct mission related research totaling some $105 million annually in the Arctic.

The National Science Foundation has a longstanding commitment to arctic research and we strongly support the need for a continued, steady level of research in the polar regions that is balanced among the relevant scientific disciplines and that recognizes the needs of mission agencies to pursue research projects essential to their mission, while at the same time, preserving the essential pluralism of goals and approaches.

Regarding the National Science Foundation program of arctic research, NSF expects to commit approximately $15 million to arctic research projects in fiscal year 1984. These funds will be split equally between our disciplinary programs and the arctic research program in the division of polar programs. We continue this dual approach because it recognizes that, although arctic research has high scientific merit and can compete successfully without need for special programs, there often are unusual support requirements in the Arctic that cannot be funded easily under the disciplinary programs.

I should note here that most NSF scientific research program support is organized on a discipline basis, that is, the programs parallel the recognized science disciplines such as physics, chemistry, oceanography, and biophysics, for example. The polar programs are the only programs within NSF which are organized on a geographic basis. The reasons for this lie in history and in the challenges posed by the polar regions.

In the late 1960's the Nation became aware of the large deposits of resources in the Arctic and the long recovery time when damaged, of the arctic environment. Rapid development seemed inevitable, and to help the country prepare for this development a series of policy studies were conducted which led to a large expansion of the Nation's arctic research efforts. The NSF arctic program is one result of those policy studies.

In order to give you an overview of the fundamental research that we are pursuing in the Arctic, I am pleased to provide a copy for the record of the NSF publication, "Arctic Research—Fiscal

Year 1982," which is a compilation of the arctic projects supported by NSF in the recently completed fiscal year.

[The material follows:]

NATIONAL SCIENCE FOUNDATION

ARCTIC RESEARCH, FISCAL YEAR 1982

The National Science Foundation supports a broadly based program of research in and on the Arctic. This research includes projects throughout the entire (non-Soviet) Arctic - including Alaska, Greenland, Canada, Svalbard, and the Arctic Ocean.

During Fiscal Year 1982, arctic research was supported by the Arctic Research Program of the Division of Polar Programs (DPP). DPP sponsors both small single-investigator research projects and the large multi-investigator and multi-discipline research programs such as the Greenland Ice Sheet Program (GISP) and Processes and Resources of the Bering Sea Shelf (PROBES).

Additional support was provided by the Division of Atmospheric Sciences (ATM), the Division of Earth Sciences (EAR), the Division of Ocean Sciences (OCE), the Directorate for Biological, Behavioral anad Social Sciences (BBS), and the Directorate for Engineering (ENG). These other NSF Divisions have no "arctic program," but sponsor meritorious science programs regardless of geographic area. In any one fiscal year, a number of these projects may be defined as "arctic" projects.

Information on this report was compiled by the Division of Polar Programs. For furthur information on any project listed, contact Polar Coordination and Information, telephone (202) 357-7934.

NATIONAL SCIENCE FOUNDATION
ARCTIC RESEARCH FY 1982

BIOLOGY

DPP GRANTS:

DPP-8204603. D. G. Ainley, Point Reyes Bird Observatory. Distribution of Sea Birds in the Subarctic Pacific Region in Relation to Physical Oceanographic Features. $129.

DPP-8200833. P. J. Berger, University of Utah. Environmental Control of Lemming Reproduction in Arctic Tundra. $57,360.

DPP-8121477. P. K. Bienfang, Oceanic Institute. Phytoplankton Sinking Rates in Subarctic Waters. $22,493.

DPP-8111887. K. R. Everett, Ohio State University. Soil Hydrology and Nutrient Dynamics in Tussock Tundra. $59,373.

DPP-8206611. J. J. Goering, University of Alaska-Fairbanks. Processes and Resources of the Bering Sea Shelf (PROBES). Phase II. $1,362,431.

DPP-8205723. W. M. Hamner, University of California-Los Angeles. The Ecology of Macroplankton in the Bering Sea Food Web. $45,833.

DPP-8212140. J. E. Hobbie, Marine Biological Lab. Arctic Lake Process Studies - A Synthesis. $49,653.

DPP-8206036. G. L. Hunt, University of California-Irvine. Trophic Relations of Marine Birds in the Southeastern Bering Sea. $10,125.

DPP-8207251. J. W. Marr, University of Colorado-Boulder. Dynamics of Tree Limit Vegetation in the Central Brooks Range of Alaska. $2,245.

DPP-8240487. H. J. Niebauer, University of Alaska-Fairbanks. Dynamics of an Ice-edge Zone. $27,690.

DPP-8121722. J. W. Nybakken, San Jose State University. Walrus Feeding in the Bering and Chukchi Seas. $77,179.

DPP BIOLOGY TOTAL 11 PROJECTS $1,714,501

OTHER BIOLOGY GRANTS:

DEB-8204447. R. Wyatt and R. G. Cameron, University of Georgia. Research in Population Biology. $7,800.

DEB-8111015. R. H. Waring, Oregon State University. Stress-induced Wave Mortality in Subalpine Forest Ecosystems. $87,420.

DEB-8108387. D. W. Inouye and O. R. Taylor, Rocky Mountain Biological Laboratory. Plant Population Dynamics. $35,000.

DEB-8109901. H. E. Wright, Jr. and G. A. King, University of Minnesota. Research in Ecology. $7,862.

DEB-7921643. L. B. Brubaker, University of Washington. Climate and Forest Productivity Changes at the End of the Little Ice Age. $55,533.

DEB-8007246. C. F. Nadler, Northwestern University. Collaborative Research on Systematics of Holarctic Mammals. $38,700.

DEB-8004148. R. S. Hoffmann, University of Kansas. Collaborative Research on Systematics of Holarctic Mammals. $32,200.

DEB-8120629. R. del Moral, University of Washington. Control of Diversity in Subalpine Plant Communities. $55,000.

DEB-7724050. W. C. Steere, New York Botanical Garden. The Mosses of Arctic North America: A Monographic Treatment. $20,800.

DEB-8103490. W. D. Billings, Duke University. Arctic Tundra: A Source or Sink for Atmospheric Carbon Dioxide in a Changing Environment. $82,018.

DEB-7922142. E. Gorham, University of Minnesota. The Ecology and Biogeochemistry of Sphagnum Bogs in North America. $477,629.

DEB-8205344. F. S. Chapin, University of Alaska. The Relationship of Relative Growth Rate of Plants to Ecosystem Processes in Alaskan Tundra. $157,549.

DEB-8117129. K. Van Cleve, University of Alaska. Forest Floor Organic Matter Quality as a Control of Nitrogen and Phosphorus Supply to Forest Plants in the Alaska Taiga. $24,239.

DEB-8207170. P. B. Reichardt and F. S. Chapin, III, University of Alaska. Anthiherbivore Metabolites of Alaskan Birch, Alder, and Balsam Poplar. $60,000.

DEB-8107520. L. C. Bliss, University of Washington. The Role of Vascular Plants and Cryptogams in Polar Semi-Deserts. $46,647.

DEB-8208201. J. W. Thomson, University of Wisconsin. American Arctic Lichens II. Microlichens. $44,150.

BNS-8207950. D. D. Anderson, Brown University. Early Man in Northwest Alaska: Phase I, the Geologic and Physiographic Setting. $54,873.

BNS-8207553. D. D. Anderson and S. C. Gerlach, Brown University. Research in Anthropology. $9,826.

PCM-8110327. J. G. Baust, University of Houston. Low Temperature and Freezing Tolerance in Insects. $21,406.

OTHER BIOLOGY	TOTAL 19 PROJECTS	$1,318,652
NSF BIOLOGY	TOTAL 30 PROJECTS	$3,033,153

OCEAN SCIENCES

DPP GRANTS:

DPP-8210555. K. Aagaard, University of Washington. A Study of the Eurasian Basin of the Arctic Ocean. $87,300.

DPP-8204603. D. G. Ainley, Point Reyes Bird Observatory. Distribution of Sea Birds in the Subarctic Pacific Region in Relation to Physical Oceanographic Features. $17,000.

DPP-8116048. J. T. Andrews, University of Colorado-Boulder. Late Pleistocene and Holocene Paleo-Oceanographic Changes in the Nearshore Environment, Baffin Island, Canada: The Galacial/Interglacial Transition. $54,075.

DPP-8106802. W. M. Briggs, University of Colorado-Boulder. Baseline Studies on Modern Ostracodes from the Southern Beaufort Sea, Alaska: A Prerequisite to Paleoenvironmental Reconstructions During the Quaternary. $38,305.

DPP-8121564. R. A. Brown, University of Washington. Marginal Ice Zone Atmospheric Boundary Layer Study. $72,084.

DPP-8201364. R. J. Fleming, National Oceanic and Atmospheric Administration. Arctic Basin Buoy Program. $10,333.

DPP-8206611. J. J. Goering, University of Alaska-Fairbanks. Processes and Resources of the Bering Sea Shelf (PROBES), Phase II. $157,690. (Also supported by Polar Biology Program)

DPP-8208566. L. E. Hachmeister, Science Applications Inc. Numerical and Laboratory Studiesof Sea Ice Interaction with a Stratified Ocean. $84,149.

DPP-8241355. J. D. Hays, Columbia University. Project SPECMAP: Mapping Variations in Ocean Spectra Over a Frequency Range 0.00001 to 0.1 Cycles per Year. $35,000.

DPP-8119155. G. F. Herman, University of Wisconsin-Madison. North Atlantic and Eastern Arctic Observing System Studies. $73,968.

DPP-8206036. G. L. Hunt, University of California-Irvine. Trophic Relations of Marine Birds in the Southeastern Bering Sea. $11,732.

DPP-8211182. T. B. Kellogg, University of Maine-Orono. Sediments Deposited by Marine-Based Ice Sheets During the Last Glacial Maximum. $30,000.

DPP-8117608. R. K. Matthews, Brown University. Arctic Paleo-Oceanography: Oxygen and Carbon Isotope Studies of Fossil Foraminifera and Molluscs. $47,976.

DPP-8121310. R. L. Michel, University of California-San Diego. Tritium Distributions in the Arctic Seas. $36,785.

DPP-8240487. H. J. Niebauer, University of Alaska-Fairbanks. Dynamics of an Ice-Edge Zone. $27,680.

DPP-8118563. J. E. Walsh, University of Illinois-Urbana. North Atlantic and Eastern Arctic Observing System Studies. $71,645.

DPP-8120136. J. E. Walsh, University of Illinois-Urbana. A Model Study of Annual and Interannual Fluctuations of Arctic Sea Ice. $143,305.

DPP-8206318. S. G. Warren, University of Washington. Solar and Infrared Radiation Modeling for Ice-Covered Oceans. $20,000.

DPP-8210568. R. B. Wearn, University of Washington. Pressure Measurements in the West Spitsbergen Current. $19,925.

DPP OCEAN SCIENCES	TOTAL 19 PROJECTS	$1,038,952

OCE GRANTS:

OCE-8024058. H. J. Niebauer, University of Alaska. Dynamics of an Ice-Edge Zone. $110,721.

OCE-8117882. W. S. Reeburgh, University of Alaska. Studies of the Sulfate Methane Transition Zone. $116,197.

OCE-8018386. T. C. Royer, University of Alaska. Recirculation in the North Pacific Subarctic Gyre. $93,492.

OCE-8118724. E. R. Dieter, University of Alaska. Ship Operations Support. $751,675.

OCE-8120764. J. B. Watkins and G. C. Anderson, University of Washington. Ship Operations Support. $3,902.

OCE OCEAN SCIENCES	TOTAL 5 PROJECTS	$1,075,987
NSF OCEAN SCIENCES	TOTAL 24 PROJECTS	$2,114,939

EARTH SCIENCES

DPP GRANTS:

DPP-8210664. J. T. Andrews, University of Colorado-Boulder. Support of a Workshop on: Quaternary Glacial Events and Chronology: Arctic Regions. $6,537.

DPP-8241343. R. S. Bradley, University of Massachusetts-Amherst. Climatic Fluctuations of Northernmost North America. $25,000.

DPP-8200840. G. W. Brass, University of Miami. Studies of Freezing Brines Using the Differential Scanning Calorimeter. $21,963.

DPP-8210898. L. B. Brubaker, University of Washington. Patterns of Late-Wisconsin and Holocene Vegetation Change in Northern Interior Alaska. $78,000.

DPP-8210156. T. N. Caine, University of Colorado-Boulder. Testing of a Free-Convection, Compliant-Thaw-Front Model to Explain the Regularity of Sorted Patterned Ground. $52,745.

DPP-8205613. P. E. Calkin, SUNY-Buffalo. Holocene Glaciation of the Brooks Range, Alaska. $69,000.

DPP-8203038. C. Craddock, University of Wisconsin-Madison. Structural Geology of Western Svalbard. $60,035.

DPP-8120473. G. R. Heath, Oregon State University. Field and Laboratory Reconnaissance of Archean Rocks in the Watkin's Fjord Area, Kangerdlugssuaq Region, East Greenland. $51,177.

DPP-8200216. W. T. Hushen, National Academy of Sciences. Support of the Fourth International Conference on Permafrost; University of Alaska, Fairbanks; July 18-23, 1983. $10,000.

DPP-8200485. D. L. Lamar, Lamar-Merifield Geologist. Structures Bearing on Sense and Magnitude of Displacement and Tectonic Significance of Billefjorden Fault Zones, Spitsbergen, Svalbard. $59,994.

DPP-8213316. G. H. Miller, University of Colorado-Boulder. Racemization-Derived Glacial and Interglacial-Age Paleotemperature Gradients Across N.W. Europe. $9,653.

DPP-8121478. B. J. Mitchell, St. Louis University. Research on Crustal Structure and Seismicity of the Eastern Arctic Regions in and Surrounding Spitsbergen. $75,000.

DPP-8204063. A. P. Morris, Wayne State University. Structural and Metamorphic Studies in the Pre-carboniferous Orogen of Western Spitsbergen, Norwegian Arctic. $38,000.

DPP-8122105. T. E. Osterkamp, University of Alaska-Fairbanks. Heat and Mass Transport in Subsea Permafrost. $89,000.

DPP-8117124. S. I. Outcalt, University of Michigan-Ann Arbor. Dynamics of Growth and Decay of Palsen and Related Frost Mounds in Central Northern Alaska. $59,454.

DPP-8121774. S. K. Short, University of Colorado-Boulder. Camparisons of the Modern and Holocene Pollen Rain and Holocene Climatic Reconstruction Between Northern Alaska and Northern Canada. $62,000.

DPP-8218646. G. C. Stephens, George Washington University. IPA Mobility Assignment. $11,968.

DPP-8207960. K. Swett, University of Iowa. Biostratigraphic and Paleoenvironmental Comparisons of Upper Precambrian Sedimentary Successions in Spitsbergen and Central East Greenland. $58,664.

DPP-8120471. D. W. Swift, University of Alaska-Fairbanks. Theoretical Studies of Convective and Diffusive Mass Transport of Brine in the Arctic Ocean Seabed. $50,045.

DPP-8206359. F. C. Ugolini, University of Washington. Dynamics of Soil Forming Processes in Arctic Alaska. $31,014.

DPP-8202345. D. R. Watts, University of South Carolina-Columbia. Paleomagnetic Study of Displaced Tectonic Provinces in Svalbard. $22,482.

DPP-8205760. H. E. Wright, University of Minnesota. Deglaciation and Reforestation of Parts of Eastern and Central Canada. $55,444.

DPP EARTH SCIENCES	TOTAL 22 PROJECTS	$ 997,175

EAR GRANTS:

EAR-8206930. B. Voight, Pennsylvania State University. Tjornes Fractures Zone Tectonic Project, Northern Iceland. $47,277.

EAR-8107525. J. M. Bartley, University of North Carolina. Basement Involvement in Deformation and Extent of Post-Emplacement Restacking of Caledonian Nappes, North Norway. $28,255.

EAR-8206300. B. C. Burchfiel, Massachusetts Institute of Technology. Lower Crustal Response to Collisonal Tectonics, North Norway. $45,255.

EAR-8206198. R. S. Coe, University of California-Santa Cruz. Paleomagnetic Study of the Peninsula Terrain. $50,000.

EAR-8115528. J. C. Moore and R. S. Coe, University of California-Santa Cruz. Accretion, Collision, and Tectonic Evolution, N. Bristol Bay Alaska. $109,127.

EAR-8206535. H. R. Naslund, Dartmouth College. A Study of the Origin of Iron-Enrichment Chemical Trends in the Basistoppen Sill and Other Layered Tholeiitic Intrusions. $36,900.

EAR-8119546. A. Traverse, Pennsylvania State University. Paleopalynology, Biostratigraphy, and Paleoenvironments of the Eureka Sound Formation, Canadian Arctic Archigelago. $18,800.

EAR-8122112. R. L. Hooke and G. W. Johnson, University of Minnesota. Glaciological Studies on Barnes Ice Cap, Canada. $30,000.

EAR-8121296. J. T. Andrews and G. H. Miller, University of Colorado-Boulder. Late Quaternary Chronology of the Central and Eastern Regions of the Laurentide Ice Sheet. $46,400.

EAR-7919424. C. F. Raymond, University of Washington. Collaborative Research on Surges of Variegated Glacier. $41,400.

EAR-7919530. W. D. Harrison, University of Alaska. Collaborative Research on Surges of Variegated Glacier. $44,300.

EAR-8007828. D. Norton, University of Arizona. Transport Properties of the Skaergaard Magma-Hydrothermal System. $75,000.

EAR-7911188. T. N. Irvine, Carnegie Institution of Washington. Field and Scale-Model Studies of Density Currents and Convection Systems in Layered Intrusions. $31,600.

EAR EARTH SCIENCES	TOTAL 13 PROJECTS	$ 604,314
NSF EARTH SCIENCES	TOTAL 35 PROJECTS	$1,601,489

GLACIOLOGY

DPP GRANTS:

DPP-8215288. C. S. Benson, University of Alaska-Fairbanks. Glacier Facies and Structure of the Near Surface Layers of the Greenland Ice Sheet. $67,285.

DPP-8205614. C. R. Bentley, University of Wisconsin-Madison. Sonic Velocity Logging in the Deep Drill Hole Dye 3, Greenland. $46,560.

DPP-8202054. H. Craig, University of California-San Diego. Helium, CO_2, and Trace Gases in Polar Ice Cores. $18,800.

DPP-8210405. K. Jezek, University of Wisconsin-Madison. High Frequency Dielectric Permittivity of Firn and Ice in South Central Greenland. $23,737.

DPP-8209824. B. Kamb, California Institute of Technology. Measurement of Basal Water Pressure in a Glacier Surge and of Flow and Basal Cavitation at the Surge Onset and in Preceding Mini-surges. $80,782.

DPP-8203651. K. C. Kuivinen, University of Nebraska-Lincoln. Coordination of Ice Core Drilling. $152,065.

DPP-8210451. K. C. Kuivinen, University of Nebraska-Lincoln. Coordination of Ice Core Drilling. $197,927.

DPP-8217256. E. R. LaChapelle, University of Washington. Blue-Glacier Project. $5,000.

DPP-8117750. C. C. Langway, SUNY-Buffalo. The Greenland Ice Sheet Program (GISP) Ice Core Studies. $315,791.

DPP-8217500. C. C. Langway, SUNY-Buffalo. The Greenland Ice Sheet Program (GISP) Ice Core Studies. $58,731.

DPP-8215590. E. Mosley-Thompson, Ohio State University. Microparticle Analysis of a 50-M Ice Core From Mt. Wrangel, Alaska. $8,219.

DPP-8200725. C. F. Raymond, University of Washington. Remote Sensing of Internal and Basal Hydraulic Conditions in a Surge-Type Glacier. $94,332.

DPP-8211619. C. F. Raymond, University of Washington. Remote Sensing of Internal and Basal Hydraulic Conditions in a Surge-Type Glacier. $25,300.

DPP-8206571. I. M. Whillans, Ohio State University. Dynamics of the Southern Portion of the Greenland Ice Sheet. $86,622.

DPP GLACIOLOGY	TOTAL 14 PROJECTS	$1,181,151

METEOROLOGY

DPP GRANTS:

DPP-8202390. C. I. Davidson, Carnegia Mellon University. Wet and Dry Deposition of Atmospheric Trace Elements in Greenland and in Barrow, Alaska. $25,210.

DPP-8210426. R. J. Fleming, National Oceanic and Atmospheric Administration. Argos Data Collection and Location Survey. $6,000.

DPP-8122148. P. J. Hart, National Academy of Sciences. Support of the Geophysics Research Board (GRB) and the Committee on Solar-Terrestrial Research (CSTR). $2,750.

DPP-8209492. A. W. Hogan, SUNY-Albany. Meteorological Variation of Arctic Aerosol. $69,355.

DPP-8111512. K. Jayaweera, University of Alaska-Fairbanks. Arctic Stratus Cloud Experiment - Analysis of Cloud Physics and Meteorological Data. $73,741.

DPP-8207470. R. A. Rasmussen, Oregon Graduate Center. Methane and Nitrous Oxide in the Ancient Atmosphere: Analysis of Polar Ice Cores. $42,000.

DPP METEOROLOGY TOTAL 6 PROJECTS $219,000

ATMOSPHERIC SCIENCES

DPP GRANTS:

DPP-8120957. L. J. Cahill, University of Minnesota. Micropulsation Research at Roberval, Quebec, and at Siple and South Pole Station. $150,000.

DPP-8204290. J. R. Doupnik, Utah State University. Digital Ionosonde Studies of the Ionosphere from Siple Station, Antarctica and Roberval, Quebec. $170,000.

DPP-8205388. R. A. Helliwell, Stanford University. Very Low Frequency Wave Investigations of the Magnetosphere at Roberval, Quebec. $226,000.

DPP-8202730. P. M. Kintner, Cornell University. Data Analysis of DC and AC Electric Fields and Magnetic Fields in the Ionosphere Above the Antarctic VLF Transmitter. $34,000.

DPP ATMOSPHERIC SCIENCES TOTAL 4 PROJECTS $580,000

ATM GRANTS:

ATM-8115321. S. Akasofu, University of Alaska. A Study of Magnetospheric Substorms. $156,300.

ATM-8108994. S. Akasofu, University of Alaska. A Study of Magnetic and Auroral Data from the IMS Alaska Meridian Chain Observatories. $105,700.

ATM-8023126. B. B. Balsley and W. L. Ecklund, National Oceanic and Atmospheric Administration. Continued Operation and Further Development of the Poker Flat MST Radar. (Logistics Support $338,000)

ATM-8111113. J. R. Barcus, University of Denver. Radiation Events and Electrical Response in the Stratosphere for the Polar Transition Region 7 < L < 20. $92,800.

ATM-8017745. R. S. Bradley, University of Massachusetts. Climatic Fluctuatitons of Northernmost North America. $37,300.

ATM-8118194. N. B. Brown, University of Alaska. Measurements and Comparisons of Meteorological Data in the Middle Atmosphere. $50,800.

ATM-8117792. T. S. Cress, Department of the Air Force. Magnetosphere-Ionosphere-Thermosphere Radar Studies Using Three High-Latitude Incoherent-Scatter Stations. $50,000.

ATM-8214642. C. S. Deehr and G. J. Romick, University of Alaska. Optical Studies of the Magnetospheric Cusp from West Spitsbergen. $89,000.

ATM-8005866. S. P. Duggal and M. A. Pomerantz, University of Delaware. The Sun and Cosmic Rays. $158,500.

ATM-8119477. J. C. Foster, Utah State University. Development of an Auroral Precipitation Index. $32,900.

ATM-8019445. T. J. Hallinan and H. C. Stenbaek, University of Alaska. Advances in the Use of Stereo TV Imaging for Auroral Research. $90,000.

ATM-8019253. J. D. Hays, Lamont-Doherty Geological Observatory of Columbia University. Project Specmap: Mapping Variations in Ocean Spectra Over a Frequency Range 0.00001 to 0.1 Cycles Per Year. $176,850.

ATM-8018248. R. A. Helliwell and C. G. Park, Stanford University. Studies of Magnetosphere-Ionosphere-Atmosphere Interactions. $92,600.

ATM-8011952. R. D. Hunsucker, University of Alaska. Continued Support Services for Users of the Chatanika Incoherent Scatter Radar. (Logistics Support $35,600)

ATM-8018897. J. Imbrie, Brown University. Project Specmap: Mapping Variations in Ocean Spectra Over a Frequency Range 0.00001 to 0.1 Cycles Per Year. $103,950.

ATM-8024889. J. D. Kelly, SRI International. Relocation of the SRI Incoherent-Scatter Radar from Chatanika, Alaska to a Very High Geomagnetic Latitude. (Logistics Support $2,258,400)

ATM-8203587. J. S. Kim, SUNY-Albany. Continued Operation of the Auroral Zone East-West Magnetometer Chain and IMS Data Analysis. (Logistics Support $110,000)

ATM-8019060. H. C. Koons, Aerospace Corporation. Coordination and Analysis of SCATHA VLF Data. $70,500.

ATM-8015673. S. B. Mende, Lockheed Palo Alto Research Laboratory. Meridian Photometer Chain Data Reduction. $46,000.

ATM-7923240. C. I. Meng, The Johns Hopkins University. A Study of Magnetospheric Dynamics in the Post International Magnetospheric Study Period. $73,700.

ATM-8106994. J. W. Meriwether, University of Michigan. Collaborative Optical Studies with Incoherent-Scatter Radar Facilities at Sondrestrom, Greenland. $221,000.

ATM-8018896. T. C. Moore, University of Rhode Island. Project Specmap: Mapping Variations in Ocean Spectra Over a Frequency Range 0.00001 to 0.1 Cycles Per Year. $42,000.

ATM-8207975. G. K. Parks, University of Washington. Auroral X-ray Imaging (Solar Terrestrial). $25,200.

ATM-8204127. N. G. Pisias, Oregon State University. Project Specmap: Mapping Variations in Ocean Spectra Over a Frequency Range 0.00001 to 0.1 Cycles Per Year. $14,070.

ATM-8200162. T. A. Potemra and S. Favin, Johns Hopkins University. Studies of Auroral Field-Aligned Currents. $111,000.

ATM-8015320. M. H. Rees and G. G. Sivjee, University of Alaska. Thermospheric Neutral Winds and Temperature. $68,000.

ATM-7923266. M. H. Rees, University of Alaska. Experimental and Theoretical Research on the Aurora Borealis. $95,000.

ATM-8012711. G. J. Romick and G. G. Sivjee, University of Alaska. Analysis of IMS Meridian Scanning Photometer Data with Respect to Magnetospheric Activity. $60,000.

ATM-8010807. G. J. Romick and S. Akasofu, University of Alaska. Operation of the Alaska-Canada High Latitude Magnetometer Chain of Stations. (Logistics Support $76,200)

ATM-8200114. G. J. Romick and M. H. Rees, University of Aalaska. Studies of Metastable Neutral and Ion Species in the High Altitude Cusp, Polar Cap and Long-Rayed Auroras (Aeronomy). $65,000.

ATM-8119861. D. W. Swift, University of Alaska. Numerical Simulation of Auroral and Magnetospheric Processes. $110,000.

ATM-8105079. L. G. Thompson, Ohio State University Research Foundation. Paleoclimatic Ice Core Records from the Tropical Quelccaya Ice Cap. $55,000.

ATM-8206318. S. G. Warren and W. J. Wiscombe, University of Washington. Solar and Infrared Radiation Modeling for Ice-Covered Oceans. $67,300.

ATM-8111132. B. J. Watkins and K. Jayaweera, University of Alaska. Dual Radar Observations of Turbulence in the Upper Troposphere and Lower Stratosphere. $73,800.

ATM ATMOSPHERIC SCIENCES	TOTAL 34 PROJECTS	$2,434,270
NSF ATMOSPHERIC SCIENCES	TOTAL 44 PROJECTS	$3,233,270

ENGINEERING

GRANTS:

CEE-8109252. J. F. Kennedy and J. C. Tatinclaux, University of Iowa. The Formation and Mechanical Properties of Nataurally Occurring Ice Systems Within the Context of Civil Engineering Interests. $62,656.

CEE-8205653. J. F. Kennedy, University of Iowa. Refrigeration Components to Equip a New Wind Tunnel for Basic Research on Ice Mechanics, Icing Processes, and Ice Loaded Structures. $28,713.

CME-8008273. G. L. Cloud, Michigan State University. Whole-field Interferometric Measurement of Surface Flow and Strain Rate in In-Situ Ice Masses. $23,475.

CME-8011601. N. L. Ackermann, Clarkson College of Technology. Shear Flow of Water-Borne Fragmented Ice Fields. $19,907.

CME-8017422. R. D. Miller, Cornell University. Hydraulic Conductivity of Frozen Soil. $24,127.

CME-8116162. T. S. Vinson, Oregon State University. Centrifugal Modeling of Ice Floe Forces and Their Failure Mechanisms for Offshore Structures. $77,805.

CEE-8211826. S. C. Colbeck, International Glaciological Society. Second Symposium on Applied Glaciology, Hanover, NH, August 23-27, 1982. $6,000.

ENG-7901636. R. L. Brown, Montana State University. A Thermodynamic Study of Temperature Gradient Metamorphism of Dry Snow Pack. $31,980. (Also funded by CME)

CME-8242949. R. L. Brown, Montana State University. A Thermodynamic Study of Temperature Gradient Metamorphism of Dry Snow Pack. $31,980.

ECS-8014579. L. Tsanag, Texas A&M University. Microwave Remote Sensing of Earth Terrain. $42,000.

ECS-8203390. J. Kong, Massachusetts Institute of Technology. Remote Sensing with Electromagnetic Waves. $50,000.

ENGINEERING TOTAL 11 PROJECTS $ 398,643

POLAR COORDINATION AND INFORMATION

DPP GRANTS:

DPP-8207098. W. T. Hushen, National Academy of Sciences. Support for the Polar Research Board. $62,500.

DPP-8117143. B. J. Landrum, Smithsonian Institution. Recording of Data and Sorting of Collections from Polar Regions. $41,702.

DPP-8121483. C. C. Langway, SUNY-Buffalo. Operation of the Central Ice Core Storage Facility and Information Exchange. $51,798.

DPP POLAR INFORMATION TOTAL 3 PROJECTS $ 156,000

SUMMARY

RESEARCH DPP	79 PROJECTS	$ 5,886,779
RESEARCH OTHER DIVISIONS	77	5,831,866
LOGISTICS SUPPORT	5	2,818,200
TOTAL	161	$14,536,845

Dr. TODD. As you know, NSF is not the only agency with an interest in arctic research. The Foundation chairs an informal Interagency Arctic Research Coordination Group composed of representatives of those other agencies. They meet periodically at NSF to discuss their research programs and their plans for future arctic research, coordinate efforts as appropriate, and review the results of ongoing arctic research programs. Other Federal agencies often cooperate with NSF in funding arctic research. In recent years, NSF has provided about 15 percent of total Federal research support.

With regard to arctic policy, you have heard from the Department of State concerning the role and activities of the Interagency Policy Group. I will just state for the record that the National Science Foundation is an active participant in the deliberations of the Interagency Policy Group, and we expect to contribute substantially to the reviews of arctic policy which will be conducted over the next year.

Turning to the bill itself, we note that the data clearinghouse functions suggested in the bill will require careful definition in order to avoid duplication with formal and informal communication networks already established. We note that Federal agencies would be obligated to furnish all arctic research data, reports, and information requested by the Council to the extent permitted by law. In the case of NSF sponsored research, data and reports are initiated by the scientific community and published in the scientific literature. We would anticipate no need for NSF to stand between the Council and such published literature.

The Foundation joins the other agencies in supporting the enactment of this bill. We thank you for this opportunity to express our views.

Mr. WALGREN. Mr. MacKay.

Mr. MACKAY. I would like to just explore what seems to me to be a threshold question.

Mr. Scully, you talk about an interagency group which is reporting to the National Security Council and is more interested in a range of things that I would call more geopolitical than scientific research. Have I picked that up properly?

You used a comment which I didn't quite catch. I thought you said elusive group. Did I hear that right? That was a kind of aside, it wasn't written.

Mr. SCULLY. Thank you.

The comment "elusive" relates to the question of how well known the group is in the community outside of the Federal agencies involved. However, the mandate of the group, which I think Dr. Ostenso identified more specially from the policy directive, is one which is very broad in terms of policy and relates to the overall geopolitical interests of the United States in the Arctic.

The question of science, however, is one that is very much linked to those geopolitical questions, both in the sense that our objectives in the Arctic are in part scientific objectives and many of our broad objectives are in fact served by science. There is a very close relationship in that area.

Mr. MACKAY. I understand that.

Now, Dr. Todd, you are chairing an informal interagency task force which meets at times at NSF to kind of make sure you are coordinated, but you are also participating in Mr. Scully's——

Dr. TODD. That is correct, National Science Foundation participates in the Interagency Arctic Policy Group. The other group that I mentioned, has no formal status, but is just a mechanism that we at the Science Foundation operate to help keep the working level program directors who support the scientific activities in the Arctic in touch with each other. As I say although we have no official standing, we do have a tradition, because we have been meeting for many years.

Generally, we invite program people to the Foundation three or four times a year to discuss their programs, or any specific activities that are new and novel. On the average, about once every 2 years, we meet informally with our counterparts from some of the Canadian agencies, but as I say, it is completely informal activity of working level science program directors.

Mr. MACKAY. Now, I would like to get you to respond to Senator Murkowski's and Congressman Young's comments about how the Arctic is different from the Antarctic.

Dr. TODD. As I suggested in my testimony, the U.S. policy and position with respect to the Antarctic is rather straightforward. The mission responsibilities of various major agencies in the Antarctic are rather small so that in this case, it is practical for the Government to assign the responsibility of maintaining a program and presence in Antarctica and to carry out U.S. policy there to one agency.

If we now go to the Arctic, where, as the Senator pointed out, we have people, we have industry, and multitudes of interests typical of a developed country, the concerns, and responsibilities of the several agencies are major; they cannot assign them to a small relatively neutral agency such as the Foundation. Inevitably, each agency that has responsibilities in the Arctic will feel the necessity of supporting some amount of basic or applied research or development that supports that portion of its mission which relates to the Arctic.

Mr. MACKAY. Well, let me try to be specific now. I am fascinated by the kind of research that Dr. Ostenso is conducting. Would his finding about what it is like in the Arctic be applicable to what it is like in the Antarctic? I mean if it is water in both places and ice in both places? What I am wondering is, I am interested in research and not at all interested in which agency does it.

Dr. TODD. Let me try to answer your question in the following way. The results of a given scientific research project in glaciology may well be applicable both to the north and the south. But there are significant differences between the two polar regions. The Arctic is essentially a mediterranean sea, that is the arctic sea is almost completely surrounded by continents, it is covered with a thin layer of ice, and has relatively little exchange of water with the other world oceans.

The Antarctic, on the other hand, is a major continent that represents perhaps 10 percent of the world land area. It is covered with a high, cold dome of ice, and surrounded by open seas, so that, for example, the atmospheric dynamics in the two regions are quite different. The energy exchange between the atmospheres and oceans in the two regions is quite different. To properly develop the understanding of the functioning of global environmental systems we really need to have results from both areas.

For example, in the Antarctic, a fundamental part of the atmospheric energy picture is played by the so-called Katabatic wind. These are formed by stratospheric air which subsides and cools and then gathers momentum as it flows downslope toward the oceans, resulting in massive storms and so forth.

In the Arctic with a thin layer of ice over a warm ocean, you don't have the same type of energy exchange. We need both in order to understand the functioning of our atmospheric heat engine.

Mr. MacKay. But the agency which is trying to do that is NOAA; is it not?

Dr. Todd. As Dr. Ostenso mentioned, there are three agencies involved in this kind of work, the Navy, NOAA, and the National Science Foundation, and, in a number of projects, such as the data buoy network, all three of us are participating.

Mr. MacKay. Do you all have trouble coordinating or does the informal mechanism suit the scientists and doesn't suit the politicians? That is what I am trying to find out. In other words, when we add another mechanism is it something that you all then have to figure out how to work around to still make the thing work?

Dr. Todd. I think from the scientist's point of view, the informal mechanisms and the mechanisms that work through scientific societies, such as the American Geophysical Union meetings, are quite good. There is one thing, and that is the amount of money that is appropriated. We could always use more.

Mr. MacKay. Well, but I am trying in sawmill language, with some suspicion, to find out if you all are really saying we are interested in the additional money being put there and we are willing for you all to put further duplication in if we get additional money, but don't put two boards, just put one board. We know we have one but don't put any more than one and we will take one if we can get the money.

Dr. Todd. Let me quote the title, the Arctic Research and Policy Act. Generally I believe that policy setting is not a function that is best reserved to the scientific community. We like to think we have an input, but it is a specialized input, so that to the extent that you expect this mechanism to provide a major input to U.S. policy with respect to arctic activities, it is more than just a science bill.

Mr. MacKay. Well, I don't want to be coming across as negative, but in what other research areas does NSF or NOAA or the Department of the Interior or the Department of State have to interact with a separate policy board? In other words, is it going to get better or worse? I thought you were setting the policy.

Dr. Todd. That really is a misnomer. For example, in the Antarctic, although we are the executive agency for carrying out the U.S. program in the Antarctic, the Foundation does not set policy for the Antarctic. We implement it.

Mr. MacKay. Is that the National Security Council then that is setting policy?

Dr. **Todd**. That is correct, and the operative mechanism to which I turn for guidance when I need it is the Antarctic Policy Group, which is an interagency group chaired by the Department of State. That group, when it makes recommendations, reports via the National Security Council to the White House.

Mr. **Walgren**. Would you yield at this point?

Is it a proper impression that the Arctic Policy Group is very limited by the President's directive and, in particular, does not consider what are called purely domestic matters; and further, emphasizes that resource development is primarily a private sector activity?

Now, with those kinds of direct limits on the range of the policy effort on the Federal level, there is no other policy source than what I take to be this Interagency Arctic Policy Group; is that correct? If there is no other policy source, isn't policy from that level not very comprehensive?

Dr. **Todd**. Perhaps I can defer to Mr. Scully on that question.

Mr. **Walgren**. Mr. Scully.

Mr. **Scully**. In approaching that question, Mr. Chairman, it seems to me that there are two parts to the question. The first relates to the source of this policy. Obviously policy in the executive branch flows from the President and Cabinet and various agencies. In certain instances there are types of policy issues or types of issues for which there have been specific structures and mechanisms established.

With regard to the Interagency Arctic Policy Group which reports to the White House, reports to the President through the National Security Council, it has been charged with a number of broad, though not exhaustive functions.

Mr. **Walgren**. In fact, it has been charged with—it seems there have been real exclusions from their functions.

Mr. **Scully**. There have indeed. The effort is not to portray the Interagency Policy Group as a group which covers all aspects of U.S. activities in the Arctic, be they domestic as well as international. I would note, for instance, that there is a Cabinet council which on the domestic side, coordinates a number of the domestic aspects of policy.

Mr. **Walgren**. Not only does it not cover them it specifically excludes domestic.

Mr. **Scully**. It excludes purely domestic matters with the proviso there be coordination. The group itself insures, if I could quote from it, "close consultation with the agencies concerned with domestic matters." Again, the process of defining the mechanism was to define specifically what the mechanism should, but also what the mechanism should not, seek to do.

Mr. **Walgren**. Then we turn to the agency concerned with domestic matters and we find the National Science Foundation saying we don't set policy, it is better set by somebody else. You have no policy on the domestic side.

Mr. **Scully**. We have no specific mechanism here. I won't necessarily argue that there is no policy. The question of policy and mechanism it seems to me should be kept distinct. In many instances, the need to develop a specific mechanism has arisen because of the particular complexities of issues involved. I wouldn't necessarily argue that the absence of a formal specific mechanism would argue that there is no policy.

Mr. **Walgren**. Would Mr. Young argue that the absence of a specific mechanism is a substantial handicap and endangering the development of the region?

Mr. **Scully**. I am not sure I can speak for Mr. Young. I assume he is supporting the legislation. The legislation identifies an area in which an additional mechanism is considered necessary and he is supporting the establishment of that mechanism.

Mr. **Walgren**. Now, Mr. Young, and Senator Murkowski said look, we are a big resource rich area, we are entirely unique, and we think you all are not aware of us and we think there is a bias toward an antarctic exploration because it is easier and agencies are not falling all over each other. We think there needs to be a council to coordinate it and you all are now saying there is not only a council there are two or three councils. But you support the establishment of another one.

What will we get out of this that we are not getting now? How do you answer their question, which says we have got one wooden boat which is in the Antarctic and the Soviets are running rings around us, and so is everybody else, and nothing is happening? I would like to hear each of your comments.

Mr. **Scully**. Well, as I understand it, I am not sure I would agree with the comment about the Soviets running rings around us. I am not exactly sure to what that would apply.

Mr. **MacKay**. That wasn't exactly what he said. He said they have 20 ships and they are doing substantial research and we are not.

Mr. **Scully**. I am not here specifically to address the mechanisms for the Antarctic. I think that the antarctic mechanisms work quite well. There are major differences between the two polar regions not only geographically and physically, but politically. There is a very important treaty system which structures the Antarctic, one of the most important treaties that has been negotiated since the Second World War. The Arctic, in contrast is an area in which there is quite a good deal of strategic competition. Impediments to an international treaty system in the Arctic are very great. I think that it is quite legitimate to have separate policy mechanisms both in terms of overall national policies and in terms of science policy.

Though it is quite legitimate to have separate mechanisms, I don't see that there is any inconsistency or any real competition between the two, nor need there be.

With regard to the Arctic, we are faced with a situation which I think my colleagues in particular have described as being a complex one, where the U.S. interests are much more direct and immediate, if only starting from the point that we have U.S. citizens resident in the Arctic on a permanent basis. We are here to indicate our support for legislation which we understand will provide a mechanism for coordinating and giving focus to our scientific efforts in the Arctic in an era when the pace of activity in the Arctic has accelerated very significantly.

If one looks back at what has been happening in the Arctic, not only U.S. Arctic, in the past decade there has been a tremendous acceleration, both in scale and in the nature of human activity—activities which are being driven by science in many ways, and we are creating new scientific needs. For that reason, we believe that it is important that there be a mechanism to give focus to the need to coordinate and develop more integrated programs of approaching scientific research in the Arctic. We see this as being complementary to, not inconsistent with, the existing policy mechanisms which are directed on the international side toward overall U.S. arctic interests, including our strategic interests, and on the domestic side toward our resource interests, toward meeting the need of our own citizens within our own areas. We would see the mechanism which is proposed in the legislation as supplementing that, not being duplicative of the efforts in the policy area, because we see this as directed toward science policy.

Mr. MacKay. That is the point I wanted to make. You see, if there is any lack at all, it is a lack of coordination in scientific research.

Mr. Scully. The bill does address a need in that area. I would quite agree particularly with Dr. Todd that there will always be, particularly in the polar areas, there will always be a high, informal level of coordination among the scientists themselves—a practice which is extremely valuable internationally, as well as nationally. Because of what has been happening in the Arctic, because we have a human presence and the Arctic has changed so radically over the past decade, I do see the need for this new mechanism to deal with coordinating research needs I don't think were apparent a decade ago or 15 years ago. But I do think that the need has emerged and I think the bill has identified or highlighted the identification of that need, and thus does meet an important gap, newly emerging gap in the sort of policy mechanisms for dealing with the Arctic.

Mr. MacKay. So the problem as you see it, is a sort of man in the biosphere problem. What is going to be the impact of man on this fragile environment and the need to begin to anticipate that. Is that what you are saying, that is a new dimension because we are in there and we are there very dramatically?

Mr. Scully. I think that is a large part of it. Science has led us to the Arctic. Originally we went to the Arctic—those from the lower latitudes—for many reasons. One was to try to learn about the planet and learn about its processes. We found that not only was there much to learn, there was much of benefit to us, and that tended to be a mutually enhancing activity. So science has supported major human activity to the Arctic, which it has made possible. That activity has also stimulated new needs in making sure that activity is consistent with the nature of the region, and consistent with the objectives we wish to see in the region.

Mr. MacKay. Mr. Chairman, I would like to get the other members to comment.

Mr. Horn. Yes sir. Thank you, Mr. Chairman.

I think I echo Mr. Scully's comments in large measure that the international policy aspect is being dealt with through the IAPG group, State Department, NSC. Domestic policy dealing with both the human resources of the Arctic and the natural resources of the Arctic being largely through the natural resources programs through the Department of the Interior and through our cooperation with NOAA and the Departments of Commerce and Human Resources, through various agencies and Cabinet council structure in the President's office, is designed to implement those particular policies.

I think where we see a deficiency is in science policy, that we have an awful lot of activity going up there in the applied research areas designed to help us administer our programs. We do an awful lot of ad hoc cooperation and coordination, but I think we have all discovered—at least in the past concluded—that this ad hoc system could be improved and I think we could bring a little more attention and appropriate national focus to the area if we had an institutionalized mechanism of the arctic science policy. I think this fills in a gap in science policy, whereas the international and larger domestic arenas have already been provided for.

Dr. OSTENSO. I think what is at issue here is the fact that policy comes in all sizes and colors. At one level of policy we must consider such things as should we continue to test the sector principle of sovereignty in the Arctic Ocean by maintaining the U.S. presence; should we maintain a Federal laboratory; what is our strategic concern over the Arctic and issues like that? That is outside of my area of technical competence and it is really outside the areas of substantial involvement of the Department of Commerce. Those are, however, are important issues.

The Department of Commerce concern in the Arctic is largely marine resources and environmental research. We don't have the good policy mechanism, to determine what, if you will, the size of that research pie should be, or to determine the allocation of the slice of that pie among agencies or disciplines. Once that is done, by whatever process exists, then the mechanism that we have described plus the Academy of Sciences and so forth of coordinating the ongoing research is substantially good, I think, but always subject to improvement.

The policy element of the proposed legislation I think will fit a real need. I don't think it addresses the need at the highest policy level—testing the sector sovereignty principle, for instance. It will, I think, improve to some extent the coordination amongst the working scientists level, although I would argue that this is reasonably good now. It will fill most explicitly the intermediate void and, if you will, in determining the size of the research pie and allocation of the slices, to put it in rather prosaic terms.

Dr. TODD. I would like to echo some of Dr. Ostenso's thought, but perhaps express it a bit differently.

Again I would like to contrast the antarctic and arctic situation. If you look at the interest of the United States in the Antarctic, they are quite varied but fairly easy to comprehend. They are foreign policy interests, they are very strong. The antarctic treaty, which we feel has been one of the most outstandingly successful treaties since World War II, was originally proposed by the United States. We are strongly committed to make it work. It does serve, in a major way, to demilitarize a continent. The role of polar regions, how they function, must be understood if we are going to manage our environmental concerns properly. By making science the manifestation of U.S. presence in the Antarctic we meet both science and foreign policy goals.

Now, having summarized that, the question comes, how much is enough to meet U.S. interests, how much of a presence, what level of activity. That can be developed, reviewed by the Interagency Antarctic Policy Group and recommendations made. That is what happens.

I mentioned in my testimony that by and large, most of the major U.S. agencies do not have large responsibilities in Antarctica. They do in the Arctic. So then we must look at the arctic situation. Within the Science Foundation, for example, I, as Division Director compete for funds to support what I see as the opportunity for exciting research in the Arctic. I compete with the physicists, the chemists, what have you, within the context of the Science Foundation, meeting its domestic mission and presenting its case to the administration and Congress.

I can present all manner of exciting research projects be done, but so can the physicists and chemists. We compete with each other. This sort of situation holds in each major agency. Interior designs its research programs to meet its share of arctic responsibilities. So does Commerce, and so forth.

I think what Mr. Scully and others are suggesting is that the mechanism to survey the whole and make a recommendation as to whether the totality of these earnest agency efforts meets overall U.S. needs and objectives is weak, and I think perhaps the reason for our support of the bill is that the mechanisms provided may strengthen that role.

Mr. MacKay. Where would you locate this Council? Would it be in the White House or in NSF or in NOAA, or would it be independent of all of you, say at the University of Alaska, or would it be at the State Department?

Mr. Scully. In light of the last part of your remarks, perhaps I should answer first. I certainly would say it should not be in the State Department. I think that the question of the location is probably not as important as making sure that the right people are involved. I don't think that we would argue that the function requires that it be located at a particular agency, in the White House, or whatever. I think it is important that the functions to be performed by the machinery, the objectives, be well defined and we have presented our views in support of the legislation.

Second, we think it is important that the right people be involved. We have suggested that there might be an expansion in the membership of the machinery involved to make sure that on the Federal side at least that those agencies that have specific responsibilities are involved. We think that it would improve the delineation and coordination of science policies, and I think to allude to what Dr. Todd was saying, the determination of priorities. But from our perspective we are not concerned about where it is located as long as it derives the proper kind of inputs.

Mr. Horn. Some place in the executive branch where it can have an impact on the budget questions and research direction. I am not quite sure where the appropriate location might be for that.

Dr. Ostenso. My interpretation of the bill was that it would largely coordinate research and develop a more coherent focus to identify needs in the Arctic and, accordingly, that function could be served from a number of involved agencies as its home base. I didn't interpret from the structure of the committee and the language of the bill that it was to address major national priority issues such as I have mentioned, such as developing our strategic arctic policy.

The critical issue—I think one of the earlier witnesses referred to turf, historic turf battles exist elsewhere in government do not exist in the Arctic because no single agency has got enough dominant interest in the Arctic to be covetous of a role of leadership, and I think that should be looked at in addressing the proper home for whatever coordinating mechanism is decided upon.

Dr. **Todd**. I must confess that I had visualized the mechanism to be set up by this bill as being essentially freestanding, somewhat on the model of the Marine Mammal Commission and Council of Environmental Quality, and so forth. I don't really feel that as far as being able to work, whether it is housed in the Department of Commerce, or Department of the Interior, or what have you, makes too much difference.

I would make an analogy with the Antarctic Policy Group, which I, as a program operator, am very pleased about because I feel that it gives me sound guidance, and strong support when I need it. I look at the mechanisms suggested for the proposed Commission and would suggest that perhaps one should pay more attention to the channels specified for making recommendations.

In the case of the Antarctic Policy Group, the input is by the National Security Council. This may be a key element to consider for the Arctic Group.

Mr. **Walgren**. It is my understanding that that would be an independent operating agency deciding on the expenditure of about twice as much money as the National Science Foundation expends in the Arctic, not involving in any way the other Federal efforts. They would really be on their own. Is that a misunderstanding of the bill from your people's perspective?

Dr. **Todd**. It is my understanding that appropriations are contemplated for research projects to be supported by the Commission. That still, at the contemplated level, would constitute only a fraction of the total U.S. research activity in the Arctic.

Dr. **Ostenso**. As I recall, the language of the bill was quite specific that this should be a supplemental effort that is complementary to existing programs. That is the way I certainly interpret it.

Mr. **Walgren**. But there are no particular provisions to take account of whatever other research is being done, and in fact, they would want, according to testimony this morning, to fill in some of the gaps, which is exactly what we view the National Science Foundation as doing, at least giving them responsibility for the overall health of research in a certain area. It seems to me implicit they are supposed to be aware of where the filling in ought to occur and to direct effort in those areas. Yet we do have an Office of Polar Programs that would view itself, I would think, as being responsible to direct an effort to fill in gaps. Yet that is being viewed as certainly not adequate.

Is it your view, Dr. Todd, that that role of the Office of Polar Programs is not adequate in the arctic situation?

Dr. TODD. I perhaps have a uniquely prejudiced view, since part of my function is to present the case and get more resources each year, so that you have to recognize that bias, and I would say that the nature of our knowledge of arctic systems and so forth, is that we are going to require significant research activities for the forseeable future there.

I am an enthusiast for polar science. I always feel that there are opportunities that we could grasp that we are perhaps having to postpone because of limited resources. As I mentioned earlier, in supporting my case in competition with the other scientific disciplines for a share of the Foundation's budget submission, I am facing other disciplines with the same problems. This bill perhaps being a congressional initiative, may be interpreted as a statement that the Congress feels that the effort is insufficient.

Mr. WALGREN. Are there specific areas of great neglect in scientific research in the Arctic from the National Science Foundation view?

Dr. TODD. We try to make sure that we have some activity going on in all of the relevant disciplines. I would prefer to say there are areas of substantial opportunity. One that is very much before us is the problems of arctic oceanography, which would include the dynamics of the ice sheet on the Arctic Ocean. This is an expensive area in which to work, although we have very often been able to save money by taking advantage of the Office of Naval Research activities to get some of our scientists up there using ONR field camps and so forth. The logistic costs are great, as the Senator pointed out. No one agency by itself so far has been able to present a strong enough case to justify an icebreaker research vessel for the Arctic. These are opportunities that we are not now grasping.

Mr. WALGREN. Did the NSF take a position on this bill last year?

Dr. TODD. No, we did not testify last year.

Mr. WALGREN. But the Department of the Interior did and they opposed the bill last year. What has changed?

Mr. HORN. Two primary features have changed, the first of which was the mandatory functioning provision contained in last year's measure providing for earmarking money for OCS revenues directly into this, so this Council basically operated independent of the President's budget and appropriations process, which we did not think was very appropriate, as well as we were working with the State Department and NSC and others on reviewing arctic policy and were not sure whether or not this bill was necessary if we could accomplish this same objective through internal executive action.

Since the President has reissued the arctic policy guidance, we concluded—based on the work we did last winter—that the bill was indeed appropriate, that the mechanism did fill in a gap that does exist.

Mr. MACKAY. The thing that has helped me put my finger on the issue better than anything else was Dr. Ostenso's comment that perhaps we have had an investiture of battle where no single agency could make a compelling case, and what you really are saying—let me ask you this and not put words in your mouth—is that you need one place to perform an advocacy function. There are more research needs than there are dollars, and that there is nobody, because this doesn't fit into agency jurisdiction proposals, there is nobody that really can make the kind of compelling case that it is going to take to give priority to the research needs of the arctic area. That, to me, is a pretty good policy statement of why you need this bill.

The question of where it ought to fit in and whether you need one, two, or three councils and missions, all that is kind of secondary, that is kind of what you are saying, Dr. Ostenso?

Dr. OSTENSO. Yes, sir, that is my view of reality. In the aggregate, as pointed out by the testimony here, there is a broad and substantial interest in the Arctic, but collectively there is no mechanism to address some major issues.

Let me give you one example. When I personally started my own polar research back in the early fifties, the United States had the largest icebreaking fleet in the world. That is far from true today and just by way of the example—I don't want to overplay this point—since 1970, the Soviet Union has built 36 icebreakers, ships with icebreaking capability, the United States 2, Canada 6, Finland 6, Argentina 2, Federal Republic of Germany 2, France 1, Japan 1, Norway 2, Sweden 3, Republic of South Africa 1, and the United Kingdom 1.

What mechanism do we have to address what is the proper sizing of our icebreaking capability? Is 2 to 36 the right ratio with the Soviet Union? That is the issue that is of concern to me and I don't think this proposed legislation is the full answer to that question, but I think it is a substantial step in the right direction, and I suspect we are going to have to get there by taking discrete, concrete steps. That is a personal view.

Mr. MACKAY. Thank you.

Ms. BACH. Dr. Ostenso, I want to ask a question with regard to your experience at NOAA.

This committee has held hearings in the past concerning the cooperative effort in the Great Lakes and, in fact, this committee sponsored and supported a Great Lakes research bill last year. I can see some similarities with the problem of Federal coordination and also with what we did regarding international coordination with respect to the Great Lakes. We had the International Joint Commission, that was Canadian and United States. That was one vehicle by which the United States could coordinate with another country in terms of research priorities, concerns of international agreements. With regard to States and coordination of Federal programs, there are statutes in NOAA.

Could you tell me, from your experience, in terms of the need for Federal coordination and the need for coordination between agencies, do you see similarities? Would you like to let the committee be aware of any cautions with regard to addressing these two types of concerns when we deal with the Arctic?

Dr. OSTENSO. Well, at the risk of being both repetitive and sounding paranoid, it turns out that my research backgrounds were Polar and Great Lakes and both have seemed to have fallen betwixt a crack of diverse, disaggregated interests, where there is one agency that can kind of carry the ball. So I think on the surface there are a lot of similarities between the Great Lakes and the Arctic in this respect.

I wouldn't carry the similarities too far because you get into all sorts of physical and geographical and economic differences and you get rapidly to some pretty key problems of where does the local, State, regional, and national interests segregate themselves, what are the boundaries between them, and that sort of thing. I don't know what the real answer is.

Ms. **Bach**. On the line of the International Joint Commission, dealing with Canada and the United States, and also the Interagency Policy Group, do each of those two entities fill the same need for countries they are dealing with? Do you see the International Arctic Policy Group addressing the international needs that we have?

Dr. **Ostenso**. I don't think I am technically competent to address the question.

Ms. **Bach**. Maybe the gentleman from the State Department.

Mr. **Scully**. On that point, first of all, the International Joint Commission is in fact the product of an international agreement between the United States and Canada. The Interagency Arctic Policy Group is a domestic policy mechanism, although addressing international matters. I think the answer to the question probably lies in the fact that the Interagency Arctic Policy Group as one of its specific mandates has been requested to examine opportunities for international cooperation in the Arctic, which could include mechanisms which might be similar, for instance, to the International Joint Commission and might include other sorts of possibilities.

The Policy Group has been asked to examine those and presumably the group will study those issues, make recommendations and if those recommendations find favor, we would then seek to implement them through the establishment of specific kinds of mechanisms, international mechanisms, either formal or informal, either bilateral or multilateral.

Ms. **Bach**. Dr. Ostenso, you also brought up another point regarding data collection and where that arctic data should be coordinated and placed? You mentioned the facility of your agency in Boulder. How would NSF feel if Boulder was the location? Should we use a facility that we currently have, within one of the agencies, as the location for all the data with regard to the Arctic?

Dr. **Todd**. I would regard the physical location of the Commission and its staff as relatively immaterial to its work. I would say economy should dictate trying to put it someplace that we already have rather than to create new facilities. So I would have no objection to Boulder.

Mr. **Walgren**. A number of people are concerned, I think, about setting up an agency that might "run over" the local indigenous people and their interests. The question is, I guess, concerning how your various agencies have operated programs in those areas. How have you taken account of what the interests are, what the local perspective might be about your activities?

We have always sort of seen the Federal Government as the protector of relatively less powerful groups in our society, although we haven't perhaps done a very good job at that. Nonetheless we have, at least from the outside, sort of viewed the Federal Government as being protector of the Indians and other minority groups. I understand there is a lot of controversy in Alaska about how an organization such as this would fit into that problem.

Can you give us any perspective on the depth of that problem, whether it has been a problem for your agency in operating in those areas, and are you in any position to make any recommendations about how an effort would be structured in order to take account of those interests?

Dr. **Ostenso**. I am not sure who you addressed that to. You were looking at me, Mr. Walgren?

Mr. **Walgren**. The three operating agencies is who I addressed that to.

Dr. **Ostenso**. I will have to confess I am expressing my own bias here and my own perspective.

We talked a lot about coordination and I would say that there is strong incentive for coordination at the research level. One is a relatively small community of people who chose to work in a harsh environment like the Arctic; and second, there are logistic problems that bias toward coordination. But most researchers are not Natives of the State of Alaska, much less the indigenous population. They are from the lower 48 and most of the research decisions are made here in Washington or elsewhere in the lower 48, and from my own perspective, I have no reason to believe that the priorities and perspectives of the Native Alaskans are substantially expressed in setting research priorities.

That is one of the attractive elements of this bill that we didn't mention. In my written testimony I applaud the requirement for non-Federal matching funds. This was analogous to my own experience from the sea grants program, which requires State matching funds and State participation in setting research priorities. So one of the aspects this bill would provide—I am not sure if more balanced perspective is the right word—from my bias it is not now as balanced as it might desirably be. It is a lower 48 program that is run in the State of Alaska is the way I largely see it.

Dr. **Todd**. I can second Dr. Ostenso's remarks, but I would extend them a little bit. In large areas of the Arctic, research directed to understanding how environmental systems work is generally accepted as worthwhile and interesting by almost all interest groups. When, however, you get to areas where the results of the research might be interpretable as having a rather immediate economic impact, or policy impact, by perhaps theorizing about social conditions and what have you, the interests of local people must be incorporated.

I think over the years perhaps some of our social science communities have not been as skilled as we hope they are now in doing this. For example, nowadays when we propose to send a U.S. researcher to do work in Greenland, we clear this in advance with the Danish Government and also with the Greenland home rule people.

Similarly I think this sort of input is necessary elsewhere in the Arctic. I know that native groups in Alaska have not always been content with social science priorities determined in the lower 48. I think to a large measure, that can be met by the requirement discussed earlier, to have knowledgeable local people represented on the Commission or Council. I think that is very important in those areas of science that deal most directly with human aspirations.

Mr. **Horn**. Regarding impact of these research programs on the Native people of Alaska, it has been our experience regarding research programs aimed at natural systems that the local population has welcomed them and, frankly, generally chastises us that we haven't done enough research before we make land management decisions. So that the bias that we have seen built in so far is an awful lot of support for more research particularly on natural systems, because of the consequences that could have for the lifestyle of many of the people pursuing traditional lifestyles in the remote areas.

I think the point at which many problems crop up is when the research yields some sort of conclusion and then the decisionmakers make some sort of land management or resource management decision. It is the consequences, not the research, that we have found to be the source of controversy. We have run with an extensive program to involve local people now. We have that both on a formal basis through all the public participation through environmental impact statement preparation, the hearings, coastal zone management programs.

We work with the State in addition to the various extensive formal programs. We try to maintain a very high degree of informal contacts. Our doors are open quite a bit. I know myself and the Secretary and other folks in the Department who work on these programs met quite frequently with the affected people from the area.

Mr. **Walgren**. Thank you very much. Does anybody have anything further at this point?

We appreciate your contribution. The hearing will recess until 2 o'clock.

[Whereupon, at 12:05 p.m., the hearing was recessed until 2 p.m.]

AFTERNOON SESSION

Mr. **MacKay**. There are numerous schedule conflicts this afternoon. I have been requested by Chairman Walgren to go ahead with the testimony and, therefore, I will call the meeting to order and we will call the members of the first panel, Dr. Roederer, and Mr. Herrera. Your written testimony will be filed. You should feel free to summarize your testimony or proceed as you see fit. We will ask both of you for your comments and then we will engage in questions and answers.

STATEMENTS OF JUAN ROEDERER, DIRECTOR, GEOPHYSICAL INSTITUTE, UNIVERSITY OF ALASKA; AND ROGER C. HERRERA, SOHIO ALASKA PETROLEUM CO.

Mr. **Roederer**. Thank you, Mr. Chairman.

My name is Juan Roederer. I am director of the Geophysical Institute of the University of Alaska and a member of the Polar Research Board of the National Academy of Sciences. However, my testimony today is personal and does not necessarily represent the official viewpoint of my university or the National Academy of Sciences.

Much has been written in recent years about the need for a U.S. arctic science policy. Many reports have been published, particularly by the National Academy of Sciences, and other organizations, and much has been said this morning about this subject. So I would like to try to synthsize some of the material by formulating some key questions and by attempting to provide some answers.

My first question is, why does the Arctic need special treatment in the context of a U.S. science policy?

There are indeed many characteristics that distinguish the Arctic from other regions when it comes to scientific research and research policy and it would be redundant for me to address some of the most obvious characteristics that were discussed quite in detail this morning, so let me just call attention to a few specific characteristics.

First, many research problems of major importance in the Arctic do not fall logically into existing funding organizations and agencies and tend to be overlooked. For instance, all research that still needs to be done to achieve a better short-term and long-term predictability of natural disturbances and of the effects of manmade perturbations in the Arctic. Those are eminently interdisciplinary subjects that require the constellation of many different disciplines, and I don't mean only the physical aspects of disburbances but also social, human, biological effects.

The study of the role of potential arctic pollution sources, their pathways, and biological effects both in the atmosphere and in the ocean; sea ice and permafrost mechanics and dynamics; polar upper atmosphere and ionosphere disturbances, et cetera. Those are all subjects that are eminently interdisciplinary and cover the interests of many agencies on one side. On the other, the very specialized problems fall between the cracks.

The obvious question of operational costs in the Arctic, that are very high, the need for basic data collection, data bases that do not exist in exhaustive form in the Arctic—there are indeed quite a number of very special characteristics from the point of view of scientific questions.

The next question is, who else besides Alaska will benefit from an arctic research policy? Well, I think it was already very clearly stated by Congressman Young. Some people think of this bill as a bonanza for Alaskan scientists and for Alaska in general. However, I as an administrator of science run all too frequently into the problem that when we submit proposals to agencies, their opinion comes back "nice proposal, but very specific interest to Alaska, go to your own State government."

Another question of importance is shouldn't there be just one integrated polar research policy covering both the Antarctic and Arctic? Again, this morning this point was addressed. Let me just summarize that there are two main reasons why it is not possible in my view to compare arctic and antarctic policies. First, of course, there is the antarctic treaty, whereas the Arctic is largely untouched by existing or prospective international agreements, a fact which in itself is most unfortunate.

Second, because of the very limited interest in Antarctica of most Government agencies, no turf problems ever arose, neither positive nor negative when one agency, the National Science Foundation was directed to maintain U.S. presence in the Antarctic.

Another question is, what should be the goals of an arctic research that is to be implemented by some organization in charge of this? The ultimate goals of a policy guided and the arctic research plan has been formulated in the recent study by the Polar Research Board, which I have chaired, and is available in print. Let me just mention one or two.

One goal is to identify and assign priorities to arctic research needs and opportunities. This is very important. There are two types of filling in gaps in research. One is gaps of knowledge which the scientists themselves in their own interest identify, submit unsolicited proposals and try to obtain support to solve those questions.

There are other types of gaps in knowledge and those are the ones that are posed by more practical aspects, problems that are posed by the people who live in the Arctic, by the industry which works in the Arctic; problems that are more applied, more of a short-term nature. It is necessary, in view of the obviously limited funds, that priorities be identified and assigned.

Another question of importance is, is the bill the best way to set and implement arctic research policy? There are several alternatives that have been suggested in recent years for the implementation of arctic research.

Mr. Chairman, I do not believe that a designation of a lead agency would be an effective option. Again, too many agencies, Federal and in the State of Alaska, and private enterprise, are involved in arctic research.

In general, these organizations have been strongly focused, specifically targeted arctic research interests or needs. Even within NSF, arctic research support activities are divided among different program offices. As past experience has shown, in this case no organization can realistically be expected to take up on its own the lead in the implementation of a comprehensive national arctic research policy.

For the Antarctic, NSF is the leading agency, but then practically everything, including almost the entire funding is channeled through that particular lead agency.

I would say that if coordination were the only task involved in this whole matter, the option of a lead agency would work, but far more than coordination is required, ranging from, as we heard already, clearinghouse activities, data base organization, funding of targeted request-for-proposal based research to fill these specific information gaps.

If funding of research projects were the only task to be performed, the option of a mixed research corporation with Federal, State, and private partnership perhaps would be a viable option, but then again far more than funding is involved and a research corporation would, for instance, be much less effective to carry out the much needed coordination of research.

I, Mr. Chairman, firmly believe that the establishment of a small, independent Federal commission would have the greatest potential for developing and effectively implementing a policy guided national arctic research plan. An example of the type of independent agency which I would envisage here is the Marine Mammals Commission, which was established in 1972. The bill before us provides for such a commission and for an arctic research fund, and Mr. Chairman, I and all those collegues active in arctic research in many different universities and government laboratories, with whom I have discussed this matter over the past 2 or 3 years, believe that this bill will indeed lead to an effective mechanism for the establishment and implementation of a U.S. arctic policy.

Mr. Chairman, I thank you very much for giving me the opportunity to testify in support of this bill.

[The prepared statement of Dr. Roederer follows:]

Testimony on HR2292

by

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MR. CHAIRMAN, My testimony is personal and does not necessarily represent the official viewpoints of my university or the National Academy of Sciences' committees to which I belong. I must, however, say that my statement has been strongly influenced and shaped by my university research activities and administrative responsibilities concerning arctic problems and by the discussions held in numerous Academy committee meetings on the subject of arctic science policy.

1. Status of Arctic Research Coordination

Of all countries bordering on the Arctic, the United States is the only one without a national institute, laboratory, or any other organization devoted to the sustained planning and support of arctic research. Up to now, the responsibility for planning, implementing, and funding arctic research has been divided between several federal agencies, the State of Alaska, and private groups whose mandates or objectives are often unconnected.

The result of this pluralistic approach to U.S. science in the Arctic is that basic research has been conducted in piecemeal fashion. Individual studies are proposed and supported separately, and their costly logistic requirements must be funded in competition with research carried out under lesser demanding environmental conditions in the rest of the country. Fundamental data-gathering and interpretation of information has been the responsibility of public agencies whose missions are separate and whose budgets may not reflect the priorities of arctic issues.

Applied research has often been proprietary. Development often preceded the acquisition of necessary scientific knowledge and scientific research in the Arctic has frequently been supported as a corrective measure only after the need for such knowledge was made apparent by serious mistakes or problems. Also, as industrial research became dominant in volume and continuity, much scientific information and understanding of arctic processes moved out of the public domain.

A boom-bust development characterized most U.S. arctic research, as scientific thrusts, often short-term and unrelated, followed one another. Because of the lack of continuity in science support, teams that achieved scientific advances disintegrated after completion of their missions, often without complete documentation of their work. At later dates whole new groups had to be formed to resume studies on the same subject. Long-term research has been losing progressively to short-term crash studies.

Over the past 15-plus years, several high-level attempts were made to coordinate U.S. arctic research programs. The documented history of these attempts reveals that, to a large extent, interagency disputes over areas of responsibility frustrated the development of adequate mechanisms of funding and the implementation of a national arctic research policy.

Several encouraging developments to remedy this situation took place during the last two years.

1. Section 1007 of the Alaskan National Interest Lands Conservation Act (Public Law 96-487) directed the Secretaries of the Interior, Defense, and Energy to review and make recommendations on (1) the need for redirecting U.S. Arctic research policy, and (2) the role of the Naval Arctic Research Laboratory facilities in developing and implementing that policy. A study was produced (Departments of the Interior, Defense, and Energy, 1982) containing an exhaustive analysis of the relevant issues with alternative proposals to implement courses of action.

2. U.S. Senator Frank Murkowski introduced a bill, cosponsored by Senators Ted Stevens, Henry Jackson, and Slade Gorton, entitled the Arctic Research and

Policy Act of 1982.

3. The Department of State issued a statement on May 9, 1983, reaffirming the unique and critical interests of the U.S. in the arctic region, and listing four major elements on which U.S. arctic policy is to be based. Among the four is "promotion of scientific research in fields contributing to knowledge of the arctic environment or of aspects of science which are most advantageously studied in the Arctic."

MR. CHAIRMAN, in my view, the most promising development of all has been the introduction of the bill, which is now before us.

During the last few years several publications have appeared on the subject, all of which, I assume, are on file with your Committee's staff. In my testimony today, I would like to synthesize some of this material by asking some key questions -- questions that I have heard time and again since this bill was first introduced in the Senate -- and by attempting to provide some answers.

The questions are as follows:

1. Why does the Arctic need special treatment in the context of United States science policy?
2. Who else, besides Alaska, will benefit from an Arctic Research Policy bill?
3. Shouldn't most of the applied research be left to industry and wouldn't the bill lead to increased regulation of private sector activities in the arctic regions?
4. Shouldn't there be just one integrated polar research policy, covering both the Arctic and Antarctic?
5. What should be the goals of an Arctic Research Plan?
6. Is this bill the best way to set and implement Arctic Research Policy?

2. Why does the Arctic need special treatment in the context of United States science policy?

Let me first try to define what I mean when I talk about the Arctic. The Arctic is normally thought of as a geographical region, one that can be clearly defined by geographic coordinates, such as the latitude of the Arctic Circle. In the context of human activity, technology and science, however, the concept of "Arctic" is much broader, and should be defined in an operational way. Indeed, when I and my colleagues talk of "Arctic Policy," we think of it as applied to, or related to, those high northern latitude regions in which cold climate, long winter nights, sea ice, permafrost, ice fog, scarcity of fast surface transportation routes, geomagnetic and auroral perturbations, etc., are all factors that, individually or in concert, affect, impair or invalidate the transplantation of "traditional" lifestyles and technologies from lower latitudes. For the purpose of my discussion, I will simply define the "Arctic" as those northern regions where human activity, lifestyle, logistics, technology, communications and defense systems require special adaptation to cold climate, to the presence of ice in its various forms, or to polar upper atmosphere disturbances.

There are many characteristics that distinguish the Arctic from other regions when it comes to scientific research and research policy. Let me mention the most obvious ones only in passing, such as (i) the research and scientific data required for a sound and rational development of the vast resources of the U.S. Arctic with minimum impact on the environment; (ii) the extreme susceptibility of the arctic environment to man-caused change and the extremely slow recovery rates; (iii) the effects of technological and developmental changes on the lifestyles, values and culture of the native population in the U.S. Arctic; (iv) the special problems that the terrestrial, marine, atmospheric and space environments pose to defense systems and operations in the Arctic and Subarctic; and (v) the fact that the Arctic remains the most notable area in the world that is, as yet, untouched by a comprehensive international agreement.

More specifically to this Hearing, I would like to call the attention to some specifics:

1. Many research problems of major importance in the Arctic do not fall logically into existing funding and organizational structures and tend to be overlooked because the lines of federal responsibility are not clearly defined. In such category falls all research required to achieve a better short-term and long-term predictability of natural disturbances and of the effects of man-made perturbations in the Arctic; [studies of real and potential Arctic pollution sources, their pathways and biological effects; sea ice and permafrost mechanics and dynamics; polar upper atmosphere and ionosphere disturbances; etc.] ①

2. Operational costs in the Arctic are high, placing Arctic research and development programs at a distinct disadvantage relative to programs carried out at more temperate locations where logistics are less expensive. This greatly enhances the need for large-scale coordination and multi-user cooperation.

3. Basic observational data similar to those collected in other regions over long periods are missing in the Arctic. The lack of continuity in many aspects of basic data collection makes it difficult to assess the magnitude of long-term environmental changes that may result from developmental activities.

4. Many aspects of the Arctic climate and the associated physical, biological, and sociological processes are both distinctive and unfamiliar. Experience gained in other settings can be quite misleading when applied to the Arctic.

5. Because support for research on Arctic problems has been comparatively low, somewhat sporadic, and rather uncoordinated, the pool of scientists and engineers experienced in the study of such problems is small. Since many specialties important in the Arctic are taught at only a few universities, the cadre of trained personnel necessary to the solution of many Arctic problems has not been developed.

3. Who else, besides Alaska, will benefit from an Arctic Research Policy bill?

Alaska is the only U.S. State in arctic and subarctic territory. An arctic research policy is thus viewed by many as a research policy for Alaska, as a "bonanza" for Alaskan scientists. Many of the "local" technology and "local" specialist requirements are perceived at the federal or national level as of eminently "Alaskan interest," and consequently are expected to be funded mostly from Alaskan sources. On the other hand, however, the Alaska state government is reluctant to support specific arctic research programs whose intended beneficiaries are spread over the entire nation.

To counter these arguments, of course one must point out that the resource development in the United States arctic and subarctic regions and adjacent waters and the deployment of defense systems at high latitude have become, and will remain, a vital part of our entire nation's economy, trade, and security.

In addition, it is important to emphasize that U.S. interests in the Arctic extend far beyond the boundaries of U.S. territory, waters and air space. We have obvious and vital defense interests in the entire Arctic Ocean, in Northern Canada and in Greenland. We have extensive scientific research interests and are operating complex observatories and research stations in Northern Canada, Greenland and Svalbard. We have vital interests in the international economic and cultural policy issues common to all circumpolar nations and their native people. We are signatories of the Svalbard treaty. And the entire northeastern defense perimeter of NATO lies in the Arctic.

MR CHAIRMAN, my own mailing list shows 305 scientists as leaders in Arctic research homebased in states other than Alaska. These are only the "top" people. The actual number of scientists actively performing research on arctic topics homebased outside Alaska is difficult to estimate, but I would put it at well over 1000. This is 3-5 times the number of Arctic scientists in Alaska!

4. Shouldn't most of the applied research be left to industry and wouldn't the bill lead to increased regulation of private sector activities in the arctic regions?

Vast applied research needs of industry in the Arctic must be satisfied swiftly, as they emerge. Understandably, the private sector has been reluctant to invest large sums in developing local technologies and solving local problems which are common to many northern enterprises. Private firms see little reason why a few should pay while many benefit. Yet if the results of studies of common problems are kept proprietary, there will be repeated and wasteful studies of the same questions. This picture is compounded by an understandable suspicion of private industry, namely, that attempts of national coordination or national policy-setting could lead to greater control and regulation of their own activities. Yet I firmly believe that, quite to the contrary, industry would greatly benefit from an expanded public data base on the arctic environment and arctic processes and that they would benefit greatly from a better and faster conduit to expanded sources of public scientific information. Indeed, it is fair to state that the over-regulation that often has plagued industrial initiatives in the Arctic was more the result of scientific uncertainty than the result of over-emphasized environmental concerns.

5. Shouldn't there be just one integrated polar research policy, covering both the Arctic and Antarctic?

In the context of discussions on Arctic Science Policy, Antarctica is often pointed out as an area for which the United States has a clear-cut and effectively implemented research policy, in spite of the fact that we have no indigenous people there, that there is no resource development (yet), and that military activities and territorial claims are suspended as long as the Antarctic Treaty is in force. However, any direct comparison between arctic and antarctic policies becomes fallacious for two reasons. First, while there exists an international treaty on the Antarctic, the Arctic is one notable area as yet largely untouched by existing or prospective international agreements (a fact which is in itself most unfortunate). Second, because of the very limited interest in Antarctica by most government agencies, no "turf" problems arose when one agency (the National Science Foundation) was directed to maintain a U.S. presence in the Antarctic. MR. CHAIRMAN, I believe that from a policy point of view, Antarctica is as different from the Arctic as is the Sahara!

5. What should be the goals of an Arctic Research Plan?

The ultimate goals of a policy-guided Arctic Research Plan are best formulated in the study by the Polar Research Board of the National Academy of Sciences entitled A United States Commitment to Arctic Research (1982):

1. To identify and assign priorities to Arctic research needs and opportunities in the physical, biological, and social sciences that deserve special national attention.

2. To provide a long-term commitment to Arctic research by arranging organizational responsibilities for the coordination, management, and funding of a program designed to meet identified high-priority research needs.

3. To identify the relative roles in Arctic research of the federal, state, local, private, and university sectors and provide a basis for their involvement in the design and conduct of an Arctic Research Plan. Also, when in the best interest of all concerned, stimulate the development of cooperative, jointly supported, interdisciplinary research programs.

4. To provide for mechanisms and institutional arrangements to obtain an adequate data base concurrently with research on fundamental Arctic processes, especially oriented toward improving the prediction of long-term environmental changes associated with Arctic resource development.

5. To promote a concerted effort to obtain quantitative understanding of short-term natural and anthropogenic hazards and risks in the Arctic, and improve prediction and prevention capabilities.

6. To provide a clearinghouse mechanism for the timely dissemination of major results and conclusions of public research, nonproprietary private research, and unclassified military research, as well as information on related manpower, facilities, and equipment.

7. To provide continuity and stability to Arctic research so that young scientists will enter and remain in professional careers in Arctic investigations, thereby providing a cadre of trained and experienced specialists.

8. To stimulate a nationally integrated means for evaluating laboratory and and logistics requirements for the conduct of Arctic research.

9. To stimulate international cooperation in the solution of problems of common interest to northern circumpolar nations.

6. Is this bill the best way to set and implement Arctic Research Policy?

It is the essence of a national arctic science policy that it provide a basis for support of science and implementation of research results in all relevant areas of integrated economic, environmental, social, and strategic concerns in a coherent, consistent and stable manner. Consequently, one main element of such policy should be the establishment of a mechanism by means of which the three sectors, federal, state and private, share responsibility in the coordination, planning and execution of arctic research. Another fundamental element should be the establishment of a funding mechanism that is (i) determined by the long-term needs of arctic research, (ii) collectively managed by the user organizations, and (iii) supplied by adequate financial resources, preferably tied in some appropriate way to the economic return of arctic development.

Several alternatives have been suggested in recent years for the implementation of arctic research policy and plan. They range from the designation of a lead agency to the establishment of a federally chartered research corporation to the establishment of a federal council and/or commission.

MR. CHAIRMAN, I do not believe that the designation of a lead agency would be an effective option. Too many agencies, federal and state of Alaska, and private enterprises are involved in Arctic research. In general, these organizations have a strongly focused, specifically targeted arctic research interest or need. Even within NSF, arctic research support activities are divided among several different program offices. As past experience has shown, no organization can realistically be expected to take up on its own the lead in the development and the implementation of a comprehensive national arctic research policy that is specifically devised to benefit all interested parties.

For the Antarctic, NSF is, of course, the lead agency -- but then practically everything, including almost the entire funding, is channeled through that lead agency. In my opinion, it would be quite unrealistic to attempt setting up a similar mechanism for the Arctic, within NSF or any other federal agency. If interagency coordination were the only task involved, this option might work. But far more than coordination is required, ranging from clearinghouse activities, to data base organization, to the funding of targeted RFP-based research to fill basic scientific information gaps.

If funding of research projects were the only task to be performed, a mixed research corporation with federal, state and private partnership, could be a viable option. But then, again, far more than funding is involved and a research corporation would be a less effective mechanism to, for instance, carry out the much needed coordination among the agencies with arctic interests.

MR. CHAIRMAN, I firmly believe that the establishment of a small, independent federal commission would have the greatest potential for developing and effectively implementing a policy-guided national Arctic Research Plan. I further believe that a congressionally established, independent commission would be best suited to lend guidance and focus to coordinated efforts of existing agencies to improve management practices, promote cost-effective development of Arctic resources, further protect the human and physical environment, and indirectly aid the U.S. defense posture in the Arctic by promoting relevant research and database acquisition.

Such a commission, independent of mission and funding agencies, should have statutorily granted access to information about agencies' plans and programs in order for the commission to meet its obligations to maintain a comprehensive overview, report on trends in Arctic research programs and expenditures as well as their relation to changing research needs, and provide necessary policy guidance to the government as a whole. In addition, the commission should coordinate the efforts of federal, state, local, industrial, and academic interests in developing and periodically reviewing and revising a coordinated national Arctic Research Plan.

The commission should have limited financial resources to initiate and support, through grants or contracts, research and study efforts in areas where either a more rapid response is needed than that which could be provided by large agencies, or in which the work might be better done by an independent agency without narrowly described mission responsibilities.

An example of the type of independent agency which I would envisage is the Marine Mammal Commission, which was established under Title II of the Marine Mammal Protection Act of 1972, Public Law 92-522.

The bill before us provides for such a Commission, and for an Arctic Research Fund. MR. CHAIRMAN, I and those colleagues active in arctic research in many different universities and government laboratories with whom I have discussed this matter, believe that Bill HR2292 will lead to an effective mechanism for the establishment and implementation of a United States Arctic Research Policy.

MR. CHAIRMAN, thank you for giving me the opportunity to testify in support of HR2292.

Mr. **MacKay** [presiding]. Thank you.

Mr. Herrera.

Mr. **Herrera**. Mr. Chairman, members of the committee, ladies and gentleman, my name is Roger Herrera, and today I am representing the Sohio Alaska Petroleum Co. My experience in the Arctic is of many years duration and I am quite clearly going to address the viewpoint of one oil company in its dealings in the Arctic to illustrate the reason why we wholeheartedly support this bill.

Perhaps I feel conspicuously alone at this table, to the extent I am not rubbing shoulders with members of my industry. I can only speculate on that reason, but I believe that it is worth mentioning that the oil industry in Alaska has very little freedom of choice any longer. Practically everything we do is subject to numerous permitting requirements and other than choosing the research that we carry out, or perhaps whether or not to bid in lease sales, we are to a large degree regulated in every other activity.

I believe probably it is for this reason that other oil companies that operate in Alaska are not here today. They probably perceive that this bill has the potential for being yet another layer of bureaucracy and quite frankly, they have enough bureaucracy already.

On the other hand, I find it easy to take a more optimistic viewpoint. I can see only benefits from this bill if it is passed. Basically, in the offshore arena of northern Alaska in particular, there have been approximately 34 exploratory wells drilled to date. Many of these are now routine operations. As such, the amount of pure research which we indulge in for those operations is limited. However, we are always endeavoring to increase the safety and efficiency of those operations and this requirement automatically mandates some expenditure of time and effort and money on basic research.

When we do move into a new arena, a physical area, as we are planning to do this coming November with the Mukluk No. 1 well, we have to invest in a tremendous degree of effort which involves pure research. It is when we embark on such projects as the Mukluk well that the benefits become very clear to us of a bill such as the one we are discussing.

The Mukluk well is in deep water, approximately 50 feet. It is in the area of extreme ice movement which we have not coped with before, and it is beyond our present experience of operations. We have embarked on a considerable effort of investigating all known data from the region applicable to the operations. It has been a research project of fairly mammoth proportions to ascertain what data is available.

Without going through a long, detailed list of the investigations which have been carried out in planning for that well—which by the way, will cost $110 million, and therefore, perhaps warrants a little research—we have covered the gamut of data gathering which has been carried out over many years in that region by all sorts of individuals and organizations.

We have also identified very real gaps in data, which we would prefer to have filled before drilling this well. And inevitably that sort of investigation is part and parcel of our operations as we move into more and more challenging areas. The geology in the

Beaufort Sea demands that we will move into more physically difficult areas in time, and so the amount of research that we will have to carry out and utilize will increase, not diminish, as we progress with exploration.

I think the gaps that we recognize in the data base in the Arctic are not necessarily there through oversight. They are there because of the difficulty of carrying out research in the Arctic; for example, the logistics are extraordinarily complicated, and the costs are extreme. Consequently, job of the Commission as outlined in the bill could well concentrate on filling these gaps.

A suggestion which immediately comes to mind toward achieving that, would be to set up a logistical base, perhaps NARL [Naval Arctic Research Laboratory] so that workers can overcome the difficulties of operating in the Arctic. An obvious lack, which I don't think has been beneficial to the Nation as a whole, is the absence of an Arctic research vessel. It is quite easy to contemplate very positive advantages from such a vessel working large parts of the year in the Arctic seas.

Ice information, although it has become voluminous, is still full of data gaps, and the possibility of a satellite monitoring of ice is one thing which the Commission could well undertake with the funds available.

A cry from the heart from an oil representative would be more knowledge on the bowhead whale. The bowhead whale represents to the oil industry and to the consumers of oil products in this Nation hundreds of millions of dollars of lost revenues, not because the bowhead whale is a specific biological problem, but because we simply don't know enough about it to ascertain the nature of its problematic occurrence in the Beaufort. That is something which many agencies are working on but which the Commission itself could undertake in a planned, long-term manner to fill up that gap in our knowledge.

There are many, many ongoing arctic programs, and I am sure everybody has repeated the necessity for those to continue and not be duplicated by the Commission.

I think what we need to concentrate on—as an operations person, this is an obvious personal bias—is an ability to cope with the Arctic and not just understand the problems of the Arctic. To cope with the demands of it, and to operate there in an acceptable fashion is necessary because ultimately that is how most benefit will accrue from this region.

The mandate in the bill to coordinate research I think is a laudable one. It is achieved at the moment in a very offhand fashion by interested groups getting together, and there is no real organization behind it.

I believe quite sincerely that arctic research could be improved if there was an overall central coordination of effort.

In particular, I would represent, Mr. Chairman, that the lease sale planning and research committee, which is a committee of the Alaska Gas & Oil Association, is worthy of a direct relationship with the Council and Commission when they are set up. The committee represents 16 oil companies and has for many years been furthering some useful and positive arctic research. It spends a lot of money. It is unique in the industry in being able to raise independent funds purely for arctic research, and I think that liaison with it as with the State of Alaska and the Native communities, and with academic institutions is beneficial.

I believe the Commission, if it is to escape the bureaucracy that has been suggested it might generate, should set its sights on a very clear policy and goal and remember that it cannot be all things to all researchers. If it establishes its capabilities and works within them to fill the gaps that are easily recognized, and concentrates on data dissemination and research coordination, it will be a positive asset to all those people that live and work in the Arctic.

I think the outcome should be a working system with a minimum of bureacracy, which helps to achieve a safe and wise utilization of the Arctic for everyone's benefit, both those people who live there and the residents of the United States as a whole.

Mr. Chairman, I thank you for being allowed to make these remarks. I am sure we both are available for questions at this stage.

[The prepared statement of Mr. Herrera follows:]

TESTIMONY OF ROGER C. HERRERA
ALASKA EXPLORATION OPERATIONS MANAGER
SOHIO ALASKA PETROLEUM COMPANY
before the
SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES on the
ARCTIC RESEARCH AND POLICY ACT OF 1983
(H.R. 2292)
June 28, 1983

My name is Roger Herrera and I am the Exploration Operations Manager for Sohio Petroleum Company in Alaska. My remarks today represent Sohio's position on Arctic research. Sohio is the dominant oil producer from the Arctic, owning, as it does, approximately 50% of the giant Prudhoe Bay oil field on the North Slope of Alaska. For the past ten years Sohio has also been at the forefront of exploration for new oil and gas resources in Alaska especially north of the Brooks Range and in the adjacent Beaufort Sea. These remarks are therefore based on a substantial background of experience and operations in the Arctic which have inevitably utilized the results of a great deal of pure and applied arctic research.

By way of illustration, the reliance of the oil industry on new, detailed data collected from the offshore arctic environment can be seen in an ongoing project to plan and drill the first well in the Harrison Bay area of the Beaufort Sea. You may recall that in October of last year, OCS lease sale No. 71 took place offering for competitive bid leases in the "Diapir area" situated principally to the northwest of Prudhoe Bay. The sale realized over $2.1 billion to the federal government and more than half of that sum was committed to leases covering the so-called "Mukluk structure" in Harrison Bay. Sohio, and its partners, was fortunate in gaining a substantial part of the Mukluk leases and after the sale it immediately intiated plans to drill an exploration well into the structure. The importance of that well called Mukluk #1, is not only its perceived high potential of discovering large quantities of oil and gas, but also the fact that it will be drilled in the most difficult physical ice and marine environment yet attempted in Alaska. The location is sited in 48 feet water depth in an area of considerable ice movement. Furthermore, the estimated cost of the well exceeds $100 million.

During the past eight months the planning for that well has involved direct reference to and study of numerous research projects carried out by multiple individuals and organizations, both private and public. For example:

- All available studies on sea ice movements in Harrison Bay were noted. These were much less numerous and complete than we would have liked.
- A new study on the nature, characteristics and load bearing capacity of the seafloor sediments was undertaken.
- All literature on the bowhead whale and its fall, westward migration was reexamined. In conjunction with this a new research study of the interaction of bowheads with acoustical stimuli, specifically those generated by seismic vessels, was developed in conjunction with other oil and service companies, the Alaska Eskimo Whaling Commission and the U.S. Government.
- A search of all biological data from Harrison Bay was undertaken.
- A reexamination of ice forces which could be expected in the area was made.
- All pertinent weather data for the region were scrutinized.
- The effects of placing mud and cuttings in the sea was ascertained using the profuse data already available on that subject. Yet another data gathering and monitoring project has been planned on the fate and effects of mud and cuttings in the Beaufort Sea near Mukluk #1.
- All available information on the nesting habits of the Common Eider Duck and the moulting and feeding areas of the Oldsquaw Ducks were studied. As

a result of that review, Sohio modified plans for stockpiling over 1 million cubic yards of gravel on Thetis Island prior to the construction of the Mukluk artificial gravel island this summer. We also initiated a new study of the Common Eiders on Thetis and Spy Islands and will attempt, by creating favorable artificial nesting habits to seduce the Eiders to nest in new areas not presently utilized by them.

- New and old data on seafloor faulting, slumping and ice gouging was examined plus evidence of shallow gas pockets.
- All information on Inupiat subsistence and cultural use of the area and adjacent onshore regions was studied.
- Information on the technology of gravel island construction in 50 foot water depths was carefully examined and a thorough review was made of all tried methods of slope protection for gravel islands.
- The profuse literature on caribou was looked at to establish potential effects that onshore support facilities for the Mukluk well might have on summer herds or overwintering caribou in the vicinity of Oliktok Point.

Over and above all this effort, a thorough reexamination has been made of the technology of the drilling operation; rig techniques have been programmed to the expected, and unexpected, geology of the well; logistics of moving men and equipment have been fine tuned to cope with the isolated well location and small surface area of the island. The use of helicopters and ice roads and a self-propelled air cushion vehicle to support the operation have been researched.

The self-propelled air cushion vehicle is perhaps of special interest. It will be the first heavy lift (85 tons) ACV with its own propulsion which has operated in the Arctic. Sohio has committed to utilize this ACV as a commercial and experimental project in order to prove the ACV concept for arctic operations. It is a modified U.S. Navy vessel and will hopefully lead to the construction of future new generation arctic hovercraft which will greatly facilitate year round offshore work in the region.

This list is a small fraction of the total research data which has been examined, but it typifies the use and status of arctic research in general. A tremendous volume of information is available but obvious gaps exist. Despite its importance ice knowledge is still lacking. Although that gap is rapidly closing, satellite information on ice conditions could clearly be improved. The bowhead whale remains a political animal probably only because we do not know enough about it. We still have problems identifying the base of the permafrost beneath the sea bed. It would be very beneficial if this could be determined by remote geophysical means. At present we have to drill a hole through the permafrost to be certain of its extent. The importance of this one factor to the interpretation of offshore oil and gas structures is so great that this single knowledge gap has huge cost implications for the initial exploration wells in a new area.

It is the recognized gaps in present knowledge which should be a prime focus of the Arctic Research Commission proposed in H.R. 2292. The funding envisioned in the bill should not displace or duplicate any of the approximately 2000 separate arctic projects currently underway, but rather concentrate on projects not presently being tackled. Some of the knowledge gaps remain so because of the cost and difficulty of the research necessary to close them. The arctic is notoriously expensive to work in and the obvious reestablishment of a work base at the Naval Arctic Research Laboratory is one way the Commission could help in closing some gaps. Another way already mentioned is the implementation of a constant ice observation satellite, and yet another is the construction and operation of a U.S. arctic research ship - an astounding lack at the moment.

Certainly the Arctic Research Commission should, as is proposed in the legislation, liaise closely with the State of Alaska, the arctic native community, and appropriate academic institutions, but equally important, it should cooperate closely with the Lease Sale Planning and Research Committee of the Alaska Oil and Gas Associaton. The 16 member oil companies of that Committee initiate and control a significant proportion of the current arctic research being undertaken in America. Their present list of research projects represents fundamental efforts to understand summer and winter conditions in the Beaufort, Chukchi and Bering Seas and develop knowledge and equipment to cope safely with those conditions. The LPRC Committee receives new proposals for studies or other arctic research from organizations, research groups, businesses and Arctic experts continually. About half the proposals submitted to it are funded by the member companies. To date, over 200 projects have been completed by the group and largely as a result of that work over 300 exploration wells and 600 development wells have been safely drilled in the Alaskan Arctic.

Unfortunately, the LPRC Committee has not seen fit to endorse H.R. 2292. The Committee has presented written testimony and raised some valid points, one of which is worth repeating. The oil industry in Alaska and other practitioners of arctic research in general, cannot support a new layer of bureaucracy which is what the Arctic Science Policy Council and Arctic Research Commission potentially represents in the eyes of some critics. A new bureaucracy is the last thing the arctic needs. The arctic is essentially a practical arena. It is too unforgiving and valuable to be considered an academic or bureaucratic laboratory and future research must be aimed at coping with its demands, not just understanding them. Only in that way will its unique features become beneficial to this nation as a whole.

Sohio has concentrated its comments on oil and gas issues which may be affected by H.R. 2292 for obvious reasons. However, it bears restating that the oil industry views the arctic as one of the few remaining regions in the U.S.A. where giant reserves of oil and gas should be found. If one assumes that our need for petroleum energy in the decades ahead will be little diminished from the past or present then the value of the arctic, for this reason alone, becomes unique. It is probably our only secure source of large scale future oil reserves.

The Arctic Research and Policy Act can go a long way to realizing the aim of safe and wise utilization of the arctic. Its aim to achieve cooperation and coordination amongst researchers is laudable and needed. It can positively help the oil industry in its efforts to establish new arctic production, it can aid our military presence in the region and it can be of great benefit to the native inhabitants of the region. For all these reasons and many more, it is an eminently supportable bill.

Mr. **MacKay**. I would like to ask each of you gentlemen if you have any knowledge of the way Canada organizes its policy in research efforts, arctic policy in research efforts?

Mr. **Herrera**. Apparently neither of us are too eager to answer that question, probably because we don't have an accurate answer. I certainly cannot answer it directly. I can only reference within my own limited experience what the oil industry does in Canada. They certainly have a very close working relationship with the Canadian Government, and environmental Canada, I believe the appropriate department is.

They are organized along the lines of the Lease/Sale Planning Research Committee I have mentioned in Alaska. They do carry out a tremendous amount of pure research. However, that is not answering your full question.

Mr. **Roederer**. I can give you the details about the Soviet Union, but——

Mr. **MacKay**. Frankly, I want to know if we are reinventing the wheel that someone else has invented. I want to know what are the good things about the way other countries have coped with this problem and what are the ways we would like to avoid?

Mr. **Roederer**. I think it has been stated several times this morning that practically, and to my knowledge, all arctic rim countries have either commissions or institutes that are specifically dedicated to arctic research. That is the case in the Soviet Union.

There is a research institute in Canada on arctic research. It doesn't set, to my knowledge, policy. That is done in the government, probably the Ministry of Environment. I am not 100 percent sure of that.

Norway has a polar research institute that is governmentally established and so have other Scandinavian countries.

The Soviet Union has an arctic research institute at the Soviet Academy and then all applied aspects are in several ministries, and naturally, in defense.

So we know we are not, I think, reinventing the wheel. We are just trying to catch up with other countries.

Mr. **Walgren**. Mr. Herrera has raised the question that a number of us are concerned about. It is that, as someone said this morning, this bill seems to have an awfully elaborate policy mechanism.

Dr. Roederer, you talked about the analogy to the Marine Mammals Commission, which has three Commissioners and operates on appropriations less than $900,000.

Mr. ROEDERER. I think when I look at the bill, the crucial part in it is the Commission because I feel that that is the group of people, if correctly defined, and drawn from the right sectors, both in the States and in Alaska, that will do the work, and I feel that the numbers proposed in the bill—I think it is something like seven—is adequate.

The Marine Mammals Commission, of course, deals with a very limited subject and can obviously work well with only a very small staff. Obviously in Arctic science we have many, many disciplines involved.

Mr. MACKAY. I am concerned about what you mean specifically when you talk about the absence of policy. Now, what policy is absent that we need?

Mr. ROEDERER. Well, first and foremost, I would say what is absent is a mandate for the agencies to talk to each other on a much more regular basis, and the directives originating from industry, the local population, and scientific community, that end up in priorities, to which the funds are appropriated and distributed.

I, as a user so to speak, of the Arctic, as a scientist, would like to be able to find to whom to turn in an easier way with a little more probability of success with my research projects.

Mr. MACKAY. That is coordination. But I mean, are you suggesting that we are indeed in need of a policy for rapid development of resources, or are we in need of a policy for conservation of resources, or are we in need of a policy for a better relationship between man and the environment so that man's impacts are not destructive?

Mr. ROEDERER. I think that the key point is the development of arctic resources in a fashion that minimizes the impact on the environment and on the people, and that is where the research needs really lie.

I think that is where the policy issues really come in.

Mr. MACKAY. So you are looking at it more in terms of the impact of development on natural systems?

Mr. ROEDERER. I would almost say both, including the impact of natural systems on development—in order to develop safely you have to have a knowledge of the natural system that doesn't exist yet.

Mr. MACKAY. Let's talk first about the council, which is the policy point. Suppose it envisioned a policy that the Department of the Interior disagreed with?

Mr. ROEDERER. I must confess I am not an expert in Federal——

Mr. MACKAY. Perhaps that is not a good example. I am trying to figure out how it would tie in with the existing mechanisms. The present mechanisms. As I understand it, the Interagency Coordinating Council functions well in the areas it is supposed to deal with, but those are not domestic.

Mr. ROEDERER. That is right.

Mr. MACKAY. And apparently there is a sort of informal coordination at the domestic level. I am saying, do you envision that this council would be a separate policy arena and, if so, how would it then have the teeth to go about enforcing?

Mr. **Roederer**. I think the teeth would have to be given to it by Congress. If this is an independent commission or council established by Congress, I presume that it would have a mandate and statutorially be authorized to go to the Federal agencies to acquire the information it needs and perhaps to exert the persuasion that needs to be exerted.

The problem, Mr. Chairman, I see here is that we also have the State, which is a young State politically, perhaps not very mature yet, and we have the entire private industry sector and it is with all these three constituencies that this Commission will have to interact.

Mr. **MacKay**. Do you see the policy council then as a forum in which these conflicting interests would be discussed and hopefully reconciled?

Mr. **Roederer**. I see that.

Mr. **MacKay**. How do you see that, Mr. Herrera?

Mr. **Herrera**. Mr. Chairman, I definitely do see it in that light. I don't think it should formulate a policy which has teeth. It should be a negotiating forum, perhaps the fund of all knowledge to educate the people it is debating with, whether it is another agency or a university or oil company. But it will be in the best position of any group to recognize what is needed overall.

An individual agency, the Department of the Interior, for example, has rather blinkered vision with regard to the Arctic, and without being critical of its officers, they don't always come to the right conclusions when they have made their own policy for the Arctic, certainly not with regard to further energy research. This new agency—proposed by the bill—could make the next step for the Department of the Interior and suggest or fund research which would help DOI. DOI perhaps doesn't see the need for it yet, but it is part of their policy in actuality. I think the Commission/Council should be a very diplomatic group. If it had the right people on it it could be very successful.

Mr. **MacKay**. Mr. Herrera, you have suggested that in effect the taxpayers should fund the research to fill in the gaps in our present knowledge, and I would like to ask why that would be appropriate as opposed to the private sector which is doing the development, actually funding that research?

Mr. **Herrera**. Well, because the people pay in the end either way, whether it is through taxes to the Government or buying their gasoline at the pump.

Mr. **MacKay**. But different people might pay?

Mr. **Herrera**. Sometimes.

Mr. **MacKay**. One way all people pay and the other way those who drive cars pay.

Mr. **Herrera**. I suspect we all use petroleum energy, whether we drive a car or not. That is an aside. I think people approach the Arctic, whether it is oil companies or academic researchers or the Department of the Interior, in a very narrow fashion. They don't look beyond their blinkered vision toward their often great benefit—perhaps not immediate, perhaps long term—which accrues when the wider picture is looked at and investigated. I think that it surely is a good function for Government to look at that wider picture, so I have no problems with the taxpayers footing some of the bill.

Mr. MacKay. I am very sympathetic to the frustrations that you feel. I have been in situations—I am from about as far away from Alaska as you can get, I am from Florida—but I have been in a situation where I have felt that Federal policy—we are sort of in the position of the grass when the elephants do battle, you are likely to get trampled accidently—and I understand the need for advocacy, so I am not asking questions to try to be negative or to make any point through the questions.

Would not this Council, as you envision it, tend to present the Alaskan point of view to a problem which you have described as a national problem, and then would we not have the other side to have the same frustrations? Here we are all funding something that is Alaska's problem. I would like for you to comment on that. How does this bill deal with that?

Mr. Roederer. Indeed, as I mentioned, that is one of the questions we have been hearing in the discussions all the time. Let me tell you my own mailing list shows, before coming here, 305 scientists outside—heads of laboratories and so on outside of Alaska, who are engaged in arctic-related research. If one takes into account that these are the heads of groups or laboratories, I estimate that there are anywhere between three and five times as many scientists engaged in arctic-related research outside of Alaska than in Alaska.

So from this point of view alone, I would answer your question with no. It should be made sure, of course, that the projects this commission or the council is going to deal with, are those that eventually are related to science or to applied science, that will be of benefit to the entire country. Indeed, regarding those projects that are of interest that are strictly local, the Commission might entice the State of Alaska to fund.

Mr. MacKay. But your idea of a forum where policy or conflicting policies would be worked out doesn't seem to be well assured in the Council in that it has a Presidentially appointed Chairman, two Presidential appointees from a list supplied by the Governor of Alaska, who would be Alaskan representatives, and then two from a list of available bureaucracts.

What about industry, what about assurances that Native Alaskans would be there? You could have a five-member Council with no scientists.

Mr. Roederer. That is why, Mr. Chairman, I personally feel that the key component of that bill is the Commission which does have, the way it is written now, assured participation of scientists and local people.

Mr. MacKay. Do you see the need for a Council as well as a Commission? I realize the answer to that question may involve some career risks but go ahead and take a shot at it.

Mr. Roederer. Probably not.

Mr. MacKay. If there were only a single Council, do you feel that—I may ask this of the next panel—do you feel that with the view in Alaska that the lower 48 are trying to run their lives, they would be satisfied with a Presidentially appointed Commission?

Mr. **Roederer**. A Presidentially appointed Council.

Mr. **MacKay**. If we only had one, is what I am saying.

Mr. **Roederer**. Probably.

Mr. **MacKay**. Mr. Herrera.

Mr. **Herrera**. I think, Mr. Chairman, the heart of this bill, of course, rests in the individuals. It doesn't matter what they are listed as, whether they are scientists or bureaucrats, or whatever, it just is a matter of luck whether you get the right person in the right job, to follow this type situation.

I think I would argue though that there is a benefit to having a Commission and a Council. The Commission is going to be doing the daily work of this group. It is going to be really involved in spending the money that it has and overseeing satisfactory results from that money, and any policy decisions which will be made, I think, should not be made by that group. They are going to be too close to the action. It needs an oversight group sitting above them, so, therefore, I would support the Council and the Commission.

Mr. **MacKay**. All right, and are you saying then, in effect, that there is a kind of a check and balance built into that idea?

Mr. **Herrera**. Yes, exactly that. I don't think the way we label the various members is necessarily the answer to getting a satisfactory group of people. I am quite happy with the labels that have presently been put on them.

Mr. **MacKay**. Thank you very much. That has been very helpful.

Our next panel will be Mr. Eugene Brower, accompanied by Mr. Hans-Pavia Rosing, Mr. Robert Harcharek, and Mr. William Brown. I appreciate your being here. I realize the distances involved. I know some of you have made a major effort.

I apologize for the scheduling problems which have caused the sparsity of attendance. Your written statements will be filed and you should feel free to summarize or give the statement in any manner you see fit. We will go through all of your testimony and then have a period of questions and answers.

STATEMENTS OF EUGENE BROWER, MAYOR, NORTH SLOPE BOROUGH, ACCOMPANIED BY HANS-PAVIA ROSING, PRESIDENT OF THE INUIT CIRCUMPOLAR CONFERENCE; ROBERT HARCHAREK, DIRECTOR OF SPECIAL PROJECTS, UKPEAGVIK INUPIAT CORP.; WILLIAM Y. BROWN, ENVIRONMENTAL DEFENSE FUND; DEAN MICHAEL MAXWELL, McGILL UNIVERSITY, MONTREAL; AND RALPH ANDERSON, SPECIAL ASSISTANT TO MR. BROWER

Mr. **MacKay**. So we will start with Mr. Eugene Brower.

Mr. **Brower**. Mr. Chairman and members of the committee, thank you for the opportunity to testify here today. My name is Eugene Brower and I am mayor of the North Slope Borough in Alaska. I would like you to meet the members of my panel. With me from Greenland is Hans-Pavia Rosing, president of the Inuit Circumpolar Conference. From McGill University in Montreal, is Dean Michael Maxwell. Also with me is Ralph Anderson my special assistant. All are available to help answer any questions. Together we hope to present you with the science, research and policy goals of the residents of the Arctic, and to address the specifics of H.R. 2292.

I will begin my testimony with a brief description of the North Slope Borough. Our local government covers 88,000 square miles.

Mr. MacKay. Say that again.

Mr. Brower. 88,000 square miles.

Mr. MacKay. That is the local government?

Mr. Brower. The local government.

We have a resident population of about 8,000, the majority of whom are Inupiat Eskimo like me, who share a common language and culture. Ours is the only home rule regional government in the North American Arctic. The North Slope Borough has enacted a comprehensive plan, which I would like to submit into your record. To the degree that the United States has a coherent arctic policy, it is to be found in the North Slope Borough.

We are the first permanent residents of the Arctic and have lived there for centuries. We are the guardians of our homeland. Although many of us do not have any college degrees or academic credentials, we have gained much knowledge about the arctic that we pass down from generation to generation. As the pace of oil and gas development increases, our commitment to guard our land with safe procedures grows stronger. We are very glad to know that our National Government will join us.

For the record, I would like to review the North Slope Borough's efforts toward balanced arctic science and policy.

Our efforts to develop an arctic policy began in 1976, when we worked with Ambassador John Norton Moore, the former chief of the U.S. delegation to the Law of the Sea Conference.

In 1977, Mayor Hopson led the borough in hosting the first meeting of the Inuit Circumpolar Conference. In broad terms, the ICC is dedicated to the protection and enhancement of the arctic people and their environment, and has recently achieved nongovernmental organization status in the United Nations.

Through the ICC, the borough has been working closely with the Canadian and Greenlandic Inuit Eskimo. The issues we have dealt with include trying to achieve the caribou treaty to protect the habitat of the porcupine herd, revising the international migratory bird treaty to decriminalize subsistance hunting.

In 1978 the borough formed the Alaska Eskimo Whaling Commission to manage Inupiat bowhead subsistence whaling, and negotiate terms with the International Whaling Commission.

Through the AEWC, we continue to help fund independent bowhead whale research each year. For example, as a result of our bowhead population research, the IWC has raised its whale population figure from a high of 800 to one in excess of 3,500. If not for our research, we believe that the IWC would have continued to underestimate the whale population.

At this time, we are also in the process of developing an innovative computer based geographical information system in cooperation with state and Federal agencies. Our GIS will have the most comprehensive data base of the Arctic, and will be used to implement our land use policies and to expedite our permitting process.

Finally, in 1982 the borough endowed the Eben Hopson chair for arctic studies at McGill University, and has created the Arctic Science Prize to be awarded every other year to scientists who have made distinguished and significant contributions to our understanding of the Arctic.

Mr. Chairman, now that we have briefly reviewed the borough's arctic policy and research efforts, I want you to understand that we assumed these responsibilities because we know that they would otherwise be ignored or never completed. Our involvement has made clear to us that research efforts in the Arctic are very unorganized, without a central facility or institution, and have a desperate need for a cohesive program policy.

I hope you can understand our disappointment that the legislation before you fails to recognize the unique knowledge and experience we have gained, as well as the incumbent rights and responsibility we feel to protect our homeland. We support the proposed legislation and view the goal as a very positive step toward eventually establishing a comprehensive arctic policy. However, we consider it essential to include the indigenous arctic people as active participants and members of any decision making bodies created by this legislation. From our point of view, it would be unacceptable for our Nation's first arctic policy measure to establish the precedent of denying our direct movement.

There is no specific language to insure that the Naval Arctic Research Laboratory will survive.

The language of the bill does not specifically direct formation of a national arctic policy.

Perhaps the greatest failing of the bill is that it recognizes only the natural sciences. No meaningful, useful arctic science policy is possible when only a portion of the science spectrum is considered. Furthermore, it is within the province of social science to insure that the Inuit are not made to sacrifice their cultural heritage as the price for arctic development.

We are disturbed by the lack of progress in arctic oil spill recovery and cleanup capability. The technology now being advanced as adequate has never been tested under arctic conditions. We have no confidence in it, yet we see no real scientific research or congressional action aimed at resolving our doubts.

In addition to this testimony, we are submitting proposed language changes for H.R. 2292. I should also mention that late this year there will be two arctic policy documents in which the subcommittee may be interested. One is a publication sponsored by Woods Hole Oceanographic Institute on U.S. Arctic Policy to which we will be contributing. The second will be the Inuit Circumpolar Conference's statement on arctic policy.

Thank you, Mr. Chairman, for the opportunity to appear here today. We will be pleased to respond to any questions.

[The prepared statement of Mr. Brower follows:]

TESTIMONY OF

EUGENE BROWER, MAYOR OF NORTH SLOPE BOROUGH

Mr. Chairman and members of the Committee, thank you for the opportunity to testify here today. My name is Eugene Brower and I am Mayor of the North Slope Borough in Alaska. I would like you to meet the members of my panel. With me from Greenland is Hans-Pavia Rosing, President of the Inuit Circumpolar Conference. From McGill University in Montreal, is Dean Michael Maxwell. Also with me is Ralph Andersen, my Special Assistant. All are available to help answer any questions. Together we hope to present you with the science, research and policy goals of the residents of the Arctic, and to address the specifics of H.R. 2292.

Description, North Slope Borough

I will begin my testimony with a brief description of the North Slope Borough. Our local government covers 88,000 square miles. We have a resident population of about 8,000, the majority of whom are Inupiat Eskimo like me, who share a common language and culture. Ours is the only home-rule regional government in the North American Arctic. The North Slope Borough has enacted a Comprehensive Plan, which I would like to submit into your record. To the degree that the United States has a coherent Arctic policy, it is to be found in the North Slope Borough.

We are the first permanent residents of the Arctic and have lived there for centuries. We are the guardians of our homeland. Although many of us do not have any college degrees or academic credentials, we have gained much knowledge about the Arctic that we pass down from generation to generation. As the pace of oil and gas development increases, our commitment to guard our land with safe procedures grows stronger. We are very glad to know that our national government will join us.

For the record, I would like to review the North Slope Borough's efforts toward balanced Arctic science and policy.

North Slope Borough Arctic Science and Policy Efforts

* Our efforts to develop an Arctic policy began in 1976, when we worked with Ambassador John Norton Moore, the former chief of the U. S. delegation to the Law of the Sea Conference.

* During the same year, our late founding mayor, Eben Hopson, campaigned for the Alaska seat in Congress on the single issue of Arctic policy development, to emphasize its importance.

* In 1977, Mayor Hopson led the Borough in hosting the first meeting of the Inuit Circumpolar Conference. In broad terms, the ICC is dedicated to the protection and enhancement of the Arctic people and their environment, and has recently achieved non-governmental organization status in the United Nations.

* Through the ICC, the Borough has been working closely with the Canadian and Greenlandic Inuit (Eskimo). The issues we have dealt with include trying to achieve a caribou treaty to protect the habitat of the porcupine heard, revising the international migratory bird treaty to de-criminalize subsistence hunting, and helping to sponsor workshops in Canada and Greenland on the effects noise from ice-breaking tankers has on marine mammals.

* In 1978 the Borough formed the Alaska Eskimo Whaling Commission (AEWC) to manage Inupiat bowhead subsistence whaling, and negotiate terms with the International Whaling Commission.

* Through the AEWC, we continue to help fund independent bowhead whale research each year. For example, as a result of our bowhead population research, the IWC has raised its whale population figure from a high of 800, to one in excess of 3,500. If not for our research, we believe that the IWC would have continued to under-estimate the whale population.

* Since 1977, the Borough has sponsored annual annual elders conferences to document and gain the knowledge of our elders. As a result, we are furthering technological adaptations to the Arctic. For example, we have included features of our traditional sod houses in the design of our modern homes and a number of building planners are now studying the sod house architecture for further adaptations.

* We are now involved in a lawsuit to protect the Arctic wetlands because the U.S. Army Corps of Engineers is trying to abandon the permitting program under Section 404 of the Clean Water Act. While we are in court to prevent this abandonment, how much better to make such decisions on the basis of coherent Arctic policy recommendations.

* At this time, we are also in the process of developing an innovative computer-based geographical information system in cooperation with state and federal agencies. Our GIS will have the most comprehensive database of the Arctic, and will be used to implement our land use policies and to expedite our permitting process.

* Finally, in 1982 the Borough endowed the Eben Hopson Chair for Arctic Studies at McGill University, and has created the Arctic Science Prize to be awarded every other year to scientists who have made distinguished and significant contributions to our understanding of the Arctic.

The Urgency for Arctic Research

Mr. Chairman, now that we have briefly reviewed the Borough's Arctic policy and research efforts, I want you to understand that we assumed these responsibilities because we know that they would otherwise be ignored or never completed. Our involvement has made clear to us that research efforts in the Arctic are very unorganized, without a central facility or institution, and have a desperate need for a cohesive program policy. In addition, this need is made even greater by the oil and gas development taking place right now without proper environmental safeguards. I will take this opportunity to list only a few of the many reasons an Arctic policy is immediately necessary.

There is a need because development is occurring right now on and off shore in the Arctic prior to development of adequate Arctic oil spill recovery systems. The need exists because -

- the State of Alaska and the federal government are considering relaxing Arctic offshore seasonal drilling restrictions. Such an action has not been well analyzed, and would risk a potentially dangerous oil spill disaster, since adequate oil spill clean-up technology has not yet been developed;

- because scientists cannot agree on the effects off-shore drilling have on marine wildlife, especially the bowhead whale;

- because at the time of the joint federal/state lease sale in the Beaufort Sea, federal environmental research funds were dramatically reduced which left large research gaps;
- because the Naval Arctic Research Laboratory, our nation's only Arctic science facility, is in the process of being dismantled without first assessing the future options for the facility or the role it would play for Arctic policy development, and finally,

- there are no national or international standards for Arctic environmental protection, resource development or scientific research programs.

Specific Comment on H.R. 2292

Mr. Chairman, now that I have explained our commitment to and the urgency for an Arctic policy, [I hope you can understand our disappointment that the legislation before you fails to recognize the unique knowledge and experience we have gained, as well as the incumbent rights and responsibility we feel to protect our homeland. We support the proposed legislation and view the goal as a very positive step toward eventually establishing a comprehensive Arctic policy. However, we consider it essential to include the indigenous Arctic people as active participants and members of any decision-making bodies created by this legislation. From our point of view, it would be unacceptable for our nation's first Arctic policy measure to establish the precedent of denying our direct involvement.]

The bill neglects the Arctic expertise of the indigenous Arctic people. The bill fails to stress the immediate and critical environmental threats to the Arctic. And the bill ignores the role and political integrity of Arctic local governments. In addition, the bill has a few other serious oversights:

* There is no specific language to ensure that the Naval Arctic Research Laboratory will survive.

* The language of the bill does not specifically direct formation of a national Arctic policy.

* The funding for this bill is pitifully small. There is only 25 million annually in this legislation for Arctic research. The 1984 and 1985 National Science Foundation authorization for Antarctic research is proposed to be $102,100,000 plus untold amounts of funds for logistical support provided by the U.S. Navy and the Coast Guard. This discrepancy in polar research funding is a travesty. Especially since there are no permanent United States residents in the Antarctic who face, as we do, serious environmental disruption.

* Perhaps the greatest failing of the bill is that it recognizes only the natural sciences. It does not consider social science aspects of the Arctic, or the effects of physical changes upon Arctic society. No meaningful, useful Arctic science policy

is possible when only a portion of the science spectrum is considered. Furthermore, it is within the province of social science to ensure that the Inuit are not made to sacrifice their cultural heritage as the price for Arctic development.

* We are disturbed by the lack of progress in Arctic oil spill recovery and cleanup capability. The technology now being advanced as adequate has never been tested under Arctic conditions. We have no confidence in it, yet we see no real scientific research or Congressional action aimed at resolving our doubts.]

* We would also like a national Arctic policy to provide for research of our major health concerns, and begin to answer questions, such as the cause for disproportionately high frequency of cancer among our people.

* In 1977, the Inuit Circumpolar Conference, adopted Resolution 77-11, declaring the Arctic a nuclear-free zone. We recognize that significant changes in the polar ice cap can have serious global consequences. We submit that a similar declaration has a place in this legislation.

In addition to this testimony, we are submitting proposed language changes H.R. 2292. I should also mention that late this year there will be two Arctic policy documents in which the subcommittee may be interested. One is a publication sponsored by Woods Hole Oceanographic Institute on U.S. Arctic Policy to which we will be contributing. The second will be the Inuit Circumpolar Conference's statement on Arctic Policy.

The United Nations has admitted the Inuit Circumpolar Conference as a Non-Governmental Organization, recognizing the commitment of Inuit to Arctic environmental protection and cooperation, and recognizing the value of Inuit traditional knowledge and culture. As American Arctic residents, we respectfully request the same recognition of our commitment and value from this Subcommittee.

Thank you, Mr. Chairman, for the opportunity to appear here today. We will be pleased to respond to any questions.

98TH CONGRESS
1st Session

H.R. 2292

To provide comprehensive national policy dealing with national needs and objectives in the Arctic

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IN THE HOUSE OF REPRESENTATIVES

March 23, 1983

Mr. YOUNG of Alaska introduced the following bill; which was referred to the Committee on Science and Technology

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A BILL

To provide comprehensive national policy dealing with national needs and objectives in the Arctic.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Arctic Research and Policy Act of 1983".

FINDINGS AND PURPOSE

SEC.2.(a) The Congress finds and declares that--

(1) the Arctic, onshore and offshore, contains vital energy resources that can reduce our dependence on foreign oil and improve the national balance of payments;

(2) as our only common border with the Soviet Union, the Arctic is critical to national defense;

(3) the Arctic should be studied by the United States to determine the value of declaring it a nuclear free zone.

~~(3)~~ (4) the renewable resources of the Arctic, specifically fish and other seafood, represent one of the Nation's greatest commercial assets;

~~(4)~~ (5) Arctic conditions directly affect global weather patterns and must be understood in order to promote better agricultural management throughout the United States;

~~(5)~~ (6) industrial pollution not originating in the Arctic region collects in the polar air mass, has the potential to disrupt global weather patterns, ~~and-must-be controlled-through-international-cooperation-and-consultation;~~

(7) industrial pollution in the Arctic also has health consequences on the residents of the Arctic, including a higher incidence of cancer, and should be controlled through international cooperation and consultation;

~~(6)~~ (8) the Arctic is the only natural laboratory for research into human health and adaptation, physical and psychological, to climates of extreme cold and isolation and may provide information crucial for future defense needs; and

~~(7)~~ (9) atmospheric conditions peculiar to the Arctic provide a unique testing ground for research into high-latitude communications, which is likely to be crucial for future defense needs;

~~(8)~~ (10) Arctic marine technology, including the technology to cleanup oil spilled in Arctic waters, is critical to the safe, cost-effective recovery and transportation of energy resources and to the national defense;

~~(9)~~ (11) most Arctic-rim countries, particularly the Soviet Union, possess Arctic technologies far more advanced than those currently available in the United States;

~~(10)~~ (12) Federal Arctic research is fragmented, uncoordinated and under capitalized at the present time;

~~(11)~~ (13) such fragmentation has led to the neglect of certain areas of research and to unnecessary duplication of effort in other areas of research;

~~(12)~~ (14) there is an immediate need to formulate a comprehensive national policy to organize and fund currently neglected ~~scientific~~ research in the natural and social sciences with respect to the Arctic;

~~(13)~~ (15) the Federal Government, in cooperation with State and local governments, should focus its efforts on the collection and characterization of basic data related to biological and geophysical phenomena in the Arctic, directing special attention to the broad accumulation of data related to sea-ice dynamics~~;~~, and to efforts to find environmentally safe technologies for the exploitation of natural resources.

~~is necessary~~ to mitigate the adverse consequences of such development to the land and its residents;

(15) Arctic research has significant value for expanding knowledge of the Arctic which can enhance the the lives of Arctic residents, increase opportunities for international cooperation among Arctic-rim countries and foster a national policy for the Arctic; and

(16) the Alaskan Arctic provides essential habitat for marine mammals, migratory waterfowl, and other forms of wildlife which are important to the Nation and which are essential to Arctic residents.

(17) The Inupiat residents of the Arctic possess a substantial knowledge of Arctic conditions, based on their experience and oral tradition, knowledge which is an important national asset that must be used in developing an understanding of the Arctic.

(18) United States Government science policy should include a commitment to the support of scientific research in its Arctic territory and in other areas of Arctic interest, as a necessary and integral part of its national policies for economic, technical, and social development, resource development, environmental protection, national security, and international cooperation in the Arctic.

(b) The purposes of this Act are--

(1) to establish an Arctic Science Policy Council and an Arctic Research Commission to promote Arctic research;

(2) to establish a centralized system for the collection and retrieval of natural and social scientific data with respect to the Arctic; and

(3) to establish priorities and provide financial support for basic and applied scientific and social scientific research with respect to the Arctic that is currently being neglected and is essential to our Nation's needs~~.~~, and

(4) to establish a framework for the development of a United States Arctic Policy, including consideration of the international implications of the Arctic.

ARCTIC SCIENCE POLICY COUNCIL

SEC.3.(a) There is established a council to be known as the Arctic Science Policy Council (hereafter in this Act referred to as the "Council").

(b) The Council shall be composed of the following members:

(1) A chairperson appointed by the President, with the advice and consent of the Senate.

(2) Two individuals from the State of Alaska who have demonstrated a knowledge and interest in the field of Arctic research, one of whom shall be an Inupiat person to represent the residents of the Arctic, appointed by the President from a list of individuals submitted by the Governor of the State of Alaska. The President in his or her discretion may request additional names to be submitted

(3) Two individuals who have demonstrated a knowledge and interest in the field of Arctic research, appointed by the President from lists submitted by the Secretary of Commerce, the Secretary of Defense, the Secretary of the Interior, the Secretary of the Department of Energy, the Secretary of State, the Secretary of Transportation (on behalf of the Coast Guard), and the Director of the National Science Foundation, one representing the natural sciences and the other, the social sciences.. The President in his or her discretion may request additional names to be submitted.

(c) Each member shall have an equal vote on matters decided by the Council.

(d)(1) Except as provided in paragraph 2, the terms of office for a member of the Council shall be two years.

(2)(A) Of the members of the Council originally appointed under paragraphs (2) and (3) of subsection (b), one member appointed under paragraph (2) of such subsection, and one member appointed under paragraph (3) of such subsection shall be appointed for a term of one year.

(B) A member may serve after the expiration of his term of office until the President appoints a successor.

(e)(1) A member of the Council not otherwise employed by the United States shall be compensated at a rate equal to the daily equivalent of the rate for level V of the Executive Schedule under section 5316 of title 5, United States Code, for each day such member is engaged in the actual performance of his duties as a member of the Council.

(2) A member of the Council who is an officer or employee of the United States or of the State of Alaska shall serve without additional compensation.

(3) All members of the Council shall be reimbursed for travel (in accordance with 5 U.S.C. 5701) and other necessary expenses incurred by them in the performance of their duties as members of the Council.

(4) No member may be compensated for more than ninety days of service each year in performance of his or her duties as a member of the Council.

DUTIES OF COUNCIL

SEC.4.(a) The Council shall--

(1) facilitate cooperation between the Federal Government and State and local governments with respect to Arctic research;

(2) coordinate and promote cooperative Arctic scientific research programs with other nations (in consultation with the Secretary of State);

(3) develop and supervise an integrated national Arctic ~~science~~ research program and policy, including an international component (except with respect to the areas of authority specifically reserved to the Arctic Research Commission under section 7 of this Act);

(4) appoint the members of the Arctic Research Commission; and

(5) cooperate with the Governor of the State of Alaska , with local governments, and with the residents of the Arctic, and with such agencies and organizations of the State as the Governor may designate with respect to the formulation of Arctic science policy.

(b) Not later than January 31 of each year, the Council shall--

(1) publish a statement of goals and objectives with respect to Arctic research and policy to guide the Arctic Re-

search Commission in the performance of its duties; and

(2) submit to Congress a report describing the activities and accomplishments of the Council during the immediately preceding calendar year~~,~~ and make recommendations concerning national Arctic policy.

COOPERATION WITH THE COUNCIL

SEC.5.(a)(1) The Council may acquire from the head of any Federal agency unclassified data, reports, and other non-proprietary information with respect to Arctic research and policy studies which the Council considers useful in the discharge of its duties.

(2) Each such agency shall cooperate with the Council and furnish all data, reports, and other information requested by the Council to the extent permitted by law.

(b) The Council may utilize the facilities and services of any Federal agency (with the consent of the appropriate agency head, with or without reimbursement), taking every feasible step to avoid duplication of research and effort.

ARCTIC RESEARCH COMMISSION

SEC. 6. (a) There is established a commission to be known as the Arctic Research Commission (hereafter in this Act referred to as the "Commission").

(b)(1) The Commission shall be appointed by the Arctic Science Policy Council and shall be composed of the following members:

(A) Four members shall be appointed from among individuals with expertise in representative areas of research relating to the Arctic (including, but not limited to, the physical, biological, health and social sciences), ~~at-least-one-of-whom-shall-be-employed-by-the-University-of-Alaska.~~ , at least one such representative shall have expertise in a branch of the social sciences.

(B) Two members shall be appointed from among Inupiat residents of the Arctic who are representative of the needs and interests of Arctic residents and live in areas directly affected by Arctic resource development.

(C) Two members shall be appointed from among individuals familiar with the Arctic and representative of the needs and interests of private industry undertaking resource development in the Arctic.

(D) One member shall be appointed from among individuals familiar with the Arctic and employed by the United States Coast Guard.

(2) Upon the appointment of the members of the Commission pursuant to paragraph (1), the Council shall designate a member of the Commission to be chairperson of the Commission.

(c)(1) Except as provided in paragraph (2), the term of office for a member of the Commission shall be four years.

(2) Of the members of the Commission originally appointed under paragraph (1) of subsection (b)--

(i) two shall be appointed for a term of one year;

(ii) two shall be appointed for a term of two years;

(iii) two shall be appointed for a term of three years; and

(iv) three shall be appointed for a term of four years.

(3) A member may serve after the expiration of his term of office until the Council appoints a successor.

(d)(1) A member of the Commission not otherwise employed by the United States shall be compensated at a rate equal to the daily equivalent of the rate for GS-16 of the General Schedule under section 5332 of title 5, United States Code, for each day such member is engaged in the actual performance of his duties as a member of the Commission.

(2) A member of the Commission who is an officer of employee of the United States or the State of Alaska shall serve without additional compensation.

(3) All members of the Commission shall be reimbursed for travel (in accordance with section 5701 of title 5, United States Code) and other necessary expenses incurred by them in the performance of their duties as members of the Commission.

(4) No member may be compensated for more than one hundred and eighty days of service each year in performance of his or her duties as a member of the Commission.

DUTIES OF COMMISSION

(SEC. 7.(a) The Commission shall--

(1) survey Arctic research and policy studies conducted by Federal and State, and local agencies, the University of Alaska and other universities, and other private and public institutions to determine priorities for future Arctic research~~,~~ and policy studies and make recommendations thereon to the Council and other interested parties;

(2) establish a data collection and retrieval center for Arctic research and policy studies (which shall be located in the State of Alaska) and promulgate guidelines for the use and dissemination of Arctic research information;

(3) make grants for such Arctic research and policy studies as the Commission deems necessary and desirable to further the goals and objectives published annually by the Council pursuant to section 4(b)(1), with special consideration being given to studies in neglected areas of Arctic research and policy studies, and

(4) consult the Council with respect to--

(A) all proposed, ongoing, and completed research programs and studies funded by the Commission,

(B) recommendations proposed by the Commission with respect to future Arctic research and policy studies, and

(C) guidelines for awarding and administering Arctic ~~research~~ grants.

(b)(1)(A) Not later than December 31 of each year, the Commission shall transmit to the Council a report describing the activities and accomplishments of the Commission duing the immediately preceding calendar year and making recommendations with respect to future Arctic research and policy studies.

(B) Such report shall be available for public inspection at reasonable times.

(2) Not later than March 31, 1984, the Commission shall submit to Congress and to the Legislature of the State of Alaska a report making recommendations with respect to the continued operation of Government-operated laboratory facilities conducting Arctic research, taking into account the efficiency and effectiveness of such facilities and the degree to which the operation of such facilities would result in the duplication of research and effort.

(c) The Commission shall cooperate with the Governor of the State of Alaska, and with such agencies as the Governor may designate with respect to--

(1) the recommendations proposed by the Commission pursuant to section &(a)(4)(B);

(2) the planning, funding, and logistical support of Arctic research; and

(3) the storage, transfer, and dissemination of Arctic scientific and technological knowledge and data.

ADMINISTRATION OF THE COMMISSION

SEC.8. The Commission may--

(1) in accordance with civil service laws and subchapter III of chapter 53 of title 5, United States Code, appoint and fix the compensation of an Executive Director and such additional staff personnel as may be necessary;

(2) procure temporary and intermittent services as authorized by section 3109 of title 5, United States Code;

(3) enter into contracts and procure supplies, services, and property; and

(4) enter into agreements with the General Services Administration for procurement of necessary financial and administrative services, for which payment shall be made by reimbursement from funds of the Commission in such amounts as may be agreed upon by the Commission and the Administrator of the General Services Administration.

STATE ELECTION

SEC. 9.(a) The State of Alaska may elect to participate or not to participate in the activities of the Council and the Commission.

(b) Failure of the State of Alaska to contribute to the Arctic Research and Policy Studies Fund (established by section 10 of this Act) for a fiscal year an amount equal to one-quarter of the amount appropriated by such Fund by the United States for the previous fiscal year shall constitute an election by such State not to participate in the Council and the Commission.

(c) Upon an election by the State of Alaska not to participate in the Council and the Commission pursuant to subsection (b)--

(1) appointments to such Council or Commission which are required to be made from among individuals--

(i) employed by the State of Alaska, or

(ii) nominated by the Governor of the State of Alaska

shall be vacated; and

(2) an appointment to fill a vacancy created by such election shall be made in such manner and from among such individuals as other appointments to such Council or Commission are required to be made (as de-

termined by the chairperson of the Council or Commission).

(d) An election by the State of Alaska not to participate in the Council and the Commission pursuant to subsection (b) shall not affect the powers or duties of those bodies.

(e) Should the State of Alaska wish to reinstate its participation following an election not to participate, it may do so by meeting the funding requirement for the year in which reinstatement is sought.

ARCTIC RESEARCH AND POLICY STUDIES FUND

SEC. 10.(a) There is hereby created a trust fund to be known as the Arctic Research and Policy Studies Fund (hereafter in this Act referred to as the "Fund"), to be available for the support of the activities of the Arctic Science Policy Council and the Arctic Research Commission.

(b) Such Fund shall consist of--

(1) amounts appropriated to such Fund;

(2) amounts contributed to such Fund by the State of Alaska; and

(3) amounts contributed by private individuals and organizations.

(c) Amounts in the Fund shall be available, until expended, for the purposes of this Act, to the extent and in such amounts as are provided for in advance in appropriation Acts.

(d)(1) There is authorized to be appropriated for the Arctic Research and Policy Studies Fund an amount not to exceed ~~$25,000,000~~ $200,000,000. per fiscal year for the fiscal years ending September 30, 1985, September 30, 1986, September 30, 1988 and September 30, 1989.

(2) In determining the amount contributed to such Fund by the State of Alaska's for a fiscal year--

(A) the fair market value (as determined by the Council in good faith) of all facilities, services, materials, and other support contributed to the Fund by the State of Alaska during such fiscal year, and

(B) all amounts contributed by private individuals and organizations,

shall be taken into account.

DEFINITION

SEC. 11. The term "Arctic" shall mean all United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering, and Chukchi Seas; and the Aleutian chain.

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ARCTIC POLICY - THE LOCAL/REGIONAL PERSPECTIVE

NUNAMI QIIYANAQTUAMI MALIĠUAGAKSRIAT - ISUMMATILLAAŊAT ATAUTCHIKUN IÑUUNIAQTUAT

Eugene Brower, Mayor

North Slope Borough

and

James Stotts, Executive Council

Inuit Circumpolar Conference

INTRODUCTION

To the gratification of America's Arctic citizens, the Inuit, the development of a deliberate American Arctic regional policy is receiving increased attention. We Inuit have advocated the necessity for broad Arctic policy development since the Prudhoe Bay oil discovery in 1968. The production of this volume, at last provides a forum for direct Inuit contribution to national discussion of Arctic policy development. We must acknowledge Woods Hole Oceanographic Institution for providing us this opportunity.

Our thesis is threefold: First, without direct Inuit involvement and participation there can be no assurances that resource development in the Arctic will occur without serious environmental consequences. Ours is the language of the ice, and our knowledge of the Arctic has never been adequately assimilated into the community of industrial and scientific Arctic knowledge. Second, the Arctic must be viewed as a contiguous region for planning and environmental protection purposes. An environmental accident, whether it be an Arctic oil spill or the degeneration of caribou calving areas, will affect all Inuit who rely upon the resources of the Arctic for subsistence. Furthermore, serious polar ice cap changes will have not only Arctic effects, but will have global consequences.[1] After the mineral resources of the Arctic have been taken, it must still remain possible for our culture to survive. Thus, the circumpolar environment must be protected. Third, local governmental and regional involvement in Arctic policy development offer possible solutions to land use as well as other conflicts in the Arctic, otherwise unattainable. Through our efforts as participants in Arctic local government and in the Arctic regional Inuit Circumpolar

Conference, significant strides have been made in formulating Arctic policy. Strong local government involvement can provide a framework for the development of rational Arctic policy. While the State of Alaska and the Federal government have established some important Arctic policies, neither has developed a comprehensive policy, and State and national objectives frequently differ and often do not conform to local objectives.[2]

In this chapter we will present the history of our involvement in Arctic policy development, suggested local and regional solutions to development conflicts in the Arctic, and our perceptions of Arctic policy priorities. We will focus primarily upon the work of the North Slope Borough.

It is, of course, development of Arctic energy resources which has focused attention on Arctic policy. This development unquestionably has been the stimulus for Arctic residents to organize locally and internationally in attempts to maintain the quality of a threatened environment, and has provided sufficient tax base to support a local government in the United States' Arctic.

LOCAL GOVERNMENT: AN IMPORTANT ARCTIC POLICY OBJECTIVE

> "As Alaska pioneered in the constitutional development of strong local government in the North, so the North Slope Borough, under its dynamic Mayor, Eben Hopson, has pioneered in the assertion of this strength."[3]

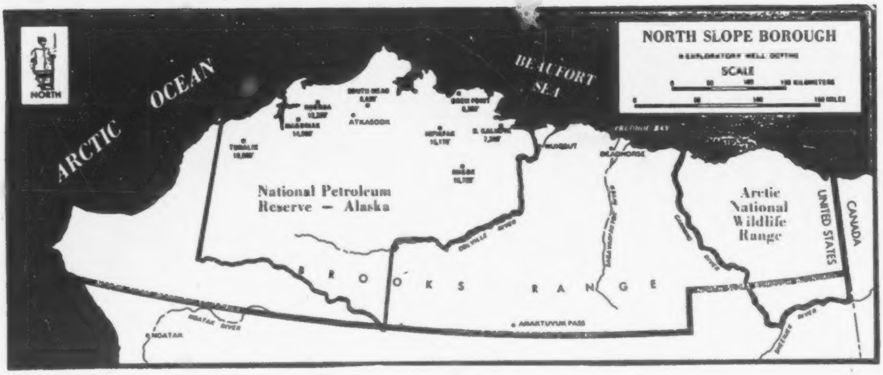
In the United States, a key element of political strength and stability is the power of local governments to exercise the functions of land use planning, zoning, and other regulatory authorities broadly affecting the environment. This great local democratic strength must be the anchor for any viable national and international Arctic policy.

Providing for the establishment of strong local government in Alaska was a major political issue when Alaska's Constitutional Convention met at the University of Alaska in 1953 to draft a State Constitution for the Territory of Alaska. The most heated and protracted debate centered upon the structure and relative power to be granted local government. The Constitutional Convention's Local Government Committee, chaired by State Senator Victor Fischer, satisfied divergent opinions by making it possible for residents to choose among a range of options for local government, and by making regional municipal homerule (i.e. Borough) government relatively easy to organize. Homerule government has a very strong constitutional base in Alaska.[4] But the drafters of Alaska's Constitution knew it would take natural resource development to finance local government in rural Alaska. The large oil reserves then suspected at Prudhoe Bay were specifically discussed as an example of potential development which could provide a sufficient tax base to support the costs of a local government in economically underdeveloped rural areas.

The North Slope Borough (NSB) was organized on July 2, 1972, and elected Eben Hopson, Sr., as its first Mayor. The Borough is a county-like unit of homerule municipal government with jurisdiction over 88,000 square miles of Arctic terrain. Most of the Borough's permanent, predominantly Inuit resident population is in Barrow, America's most northern community. The Borough encompasses seven other outlying village communities, consisting of the coastal communities of Kaktovik, Nuiqsut, Wainwright, Point Lay and Point Hope, and the inland villages of Atkusuk and Anaktuvuk Pass. (See Figure 1) All the Borough's residents depend, to some degree, upon subsistence hunting and fishing.

FIGURE 1

March 1978, The Arctic Coastal Zone Management Newsletter


NORTH
ARCTIC OCEAN
BEAUFORT SEA
NORTH SLOPE BOROUGH
SCALE
ATKASOOK
PRUDHOE BAY
DEADHORSE
National Petroleum Reserve — Alaska
COLVILLE RIVER
Arctic National Wildlife Range
UNITED STATES
CANADA
BROOKS RANGE
ANAKTUVUK PASS
NOATAK RIVER
NOATAK

The North Slope Borough became the only Borough in the State with a Native majority population, which, with incorporation, acquired the means to influence developmental activities within Borough boundaries. The Borough assumed the mandatory powers of assessment and collection of taxes, education, planning, platting and zoning. Additional area-wide functions of boroughs under Alaska State law include air pollution control, water pollution control, transportation system planning, airport and aviation facilities, housing, and preservation and protection of historic sites.[5] Subsequent to Borough formation, the villages transferred all local governmental powers to the Borough, except for recreation functions.

Immediately following North Slope Borough incorporation, the oil and gas industry, preferring to be subject to no local taxes or regulations, filed a petition for review in Anchorage Superior Court of the Alaska Boundary Commission's positive recommendation regarding NSB formation . When it was found that the process of NSB formation was in order, the oil industry filed suit, with the encouragement of the State administration, according to then State Senator Willie Hensley.[6] Mobile Oil Corporation, Amarada Hess Corporation, Amoco Products Company, British Petroleum Corporation, Humble Oil and Refining Company, Phillips Petroleum Company, and Union Oil of California moved for a summary judgment. The suit charged that the Commission's decision favoring NSB incorporation "resulted from proceedings without and in excess of its jurisdiction; [and from] absence of a fair hearing in violation of the due process clauses of the Fourteenth Amendment of the United States and ... the Alaska Constitution."[7] The suit also challenged the geographic extent of the proposed Borough. In upholding the Borough's legal incorporation in January of 1974, the Court found that industry objections to the huge regional area of the Borough (88,000 square miles) could not be sustained. The Court cited the need for the entire Arctic Slope to be managed as a single regional Arctic ecological system upon which all Arctic residents depend for subsistence food harvest.[8]

The particular value of the North Slope Borough's local government lies in its reliance on the Arctic knowledge of its Inupiat residents. This Inupiat Arctic expertise has resulted in an environmentally based local government. As the late Mayor Eben Hopson said:

> "We, Inupiat, comprise a single Arctic regional community. For thousands of years, our common economic interests have centered upon the food chain upon which we depend for survival. Now, since the Prudhoe Bay oil strike, we have been additionally bound by the world's need for our oil, gas and coal. Arctic knowledge has become a regional industry in which the demand for competent scientists is becoming greater than the supply. However, this regional industry is not community based. It neither seeks nor includes the knowledge that we Inupiat possess. Arctic science seem unconnected to the wealth of Arctic knowledge stored in our language: Inupiaq. Far from being community-based, the industry of Arctic knowledge is controlled by essentially national and industrial interests. This industry is not organized to meet our regional community needs, but, rather to meet other community needs. Needs like military defense. The needs of duck-hunters of Detroit. And now, the pressing need for oil, gas and coal. Sharing is important social behavior in the Arctic. We want to share our wealth in oil, gas and coal, but we feel that we must have a say in the means by which our fuels are extracted from our land. Sharing means to us that we must be allowed to measure environmental risks in our own Inupiaq language. For in our language is a whole natural science of the Arctic."[9]

When Mayor Hopson delivered these words to the Alaska Science Conference in Anchorage in 1976, the North Slope Borough had been in existence for four years. The Alaska Native Settlement Claims Act had been law for five years. The Trans-Alaska oil pipeline system (TAPS) was one year from completion. Prudhoe Bay development had begun in a vacuum without the guidance of local ordinances, as the people of the Arctic worked to establish their Borough government. The Borough set out to document traditional use areas and critical game habitat and to develop a comprehensive plan including a coastal zone management program by which to ensure, through subsequent ordinances and permitting, that future development in the Arctic take place with minimum damage to the environment. This is an enormous task which continues as an ongoing process.

As the Borough began its work, development progressed. The result at Prudhoe Bay was unnecessary overconsumption of land area and displacement of caribou calving activity. The result along the TAPS corridor has been poor culvert engineering with negative effects on fish overwintering areas. The result at Galbraith Lake was that a traditional Inuit subsistence use area was utilized as a construction camp site and oil seeps polluted the lake. The result along the haul road was poor culvert engineering damaged fish stocks, defoliation, and changes in wildlife migration patterns.[10] Now the zoning and permitting requirements in the North Slope Borough's Comprehensive Plan are in effect, so that future development shall not be as damaging to the Arctic environment.

While environmental protection goals have been paramount to the organization of Inuit locally and internationally, a determination to sustain the cultural subsistence base of the circumpolar indigenous community is a primary Inuit goal. The Inuit culture is integrated with and dependent upon the Arctic environment. Subsistence patterns represent far more than hunting. The following quotation indicates how subsistence represents survival on both a physiological and psychological level:

> "The peculiar notion that hunting is only a subsistence technique rather than a more comprehensive and integrating bio-behavior system with complex physical and intellectual components is still commonly misrepresented....hunting is a complex activity with many ramifications in childhood training, scanning, stalking, killing, retrieval, and distribution."[11]

Not only sustenance, but prestige, celebrations, dance, language, care for the infirm are enbodied in Inuit subsistence activities.

> "The cultural base of the Inupiat of the North Slope is largely vested in the subsistence pursuits of the people. It is important to recognize that the incomes of the people of the North Slope are supplemented by subsistence activities. In many cases this is not essential from the perspective of obtaining sufficient nutrition. However, subsistence is essential if this Inupiat culture is to survive. The esteem accorded the captain for his skill and bravery; the sharing of the catch on a community basis; the provisions for the old, the infirm, the ill and the needy from the catch; the camaraderie and brotherhood fostered in the hunt; the passing of legends from generation to generation; and the total reliance upon Inupiaq as the language of the hunt; are all basic to the Inupiat culture which prizes the abilities of people to survive in the Arctic and from this evolves the sophisticated personal relationships, the generous sharing of time and property and other elements appreciated in so-called 'village living.'"[12]

To many who do not live in the Arctic the meaning of subsistence is hard to grasp. To those who have spent some time in the Arctic, the importance of subsistence activities cannot be overemphasized. Jean Malaurie, after living with Greenlandic Eskimos has translated thoughtfully the gestalt of subsistence:

> "For the Eskimo everything is a sign. Alert, ever on the lookout, they sniff the breeze...; they appraise how dry is the sound of cracking ice, how damp the blanket of snow in warmer weather; they interpret the mood of animals, the halo around the moon, and the vibration of the air. These thousands of signs are translated into their very rich language; they are so many letters in an age-old alphabet whose characters the Eskimo can readily decipher....In our modern world the fate of this handful of men may not seem

> important. Yet what is at stake is critical: is not each of these Eskimos the custodian of human capital of a fund of experience, knowledge and traditions handed down through generations? Every time a so-called minority culture is eradicated mankind's patrimony is undoubtedly impoverished...."[13]

We foresee and must plan for the time when our Arctic resources will be depleted. When the development is gone, the tax bases are gone and the jobs are gone, we are determined that our descendants will survive, just as our ancestors ensured our continuity. This survival depends on the survival and maintenance of our Arctic wildlife and the minimal disturbance of the Arctic environment and wildlife habitats. If we as a culture are not to become a seriously endangered species, Inuit subsistence traditions must continue and be allowed to survive. It is in the forum of Arctic local and regional governments where survival can be assured.

HISTORY OF ARCTIC POLICY INITIATIVES

While advocating the necessity for Arctic policy development since the 1960s, we Inuit have witnessed an inability and a reluctance on the part of Federal and state institutions to comprehensively address Arctic policy. Perhaps the first serious consideration of national Arctic policy resulted from the Federal Field Committee for Development Planning in Alaska (See Table 1). This Presidential commission was formed after the devastating earthquake in 1964, largely through the efforts of Alaska's late United States Senator Bob Bartlett. The Federal Field Committee, chaired by Joseph Fitzgerald, initiated the first comprehensive Arctic resource inventory which focused on

TABLE 1

1964	Federal Field Committee
1968	Prudhoe Bay discovery
1971	Alaska Native Claims Settlement Act
	National Security Decision Memo on Arctic Policy
	Joint Federal/State Land Use Planning Commission created
1972	North Slope Borough incorporation
	Federal Coastal Zone Management Act
1973	Arctic Peoples Conference in Copenhagen
1974	Construction begun on the Trans-Alaska Pipeline
1976	NSB Mayor Hopson's Congressional campaign on Arctic Policy issue
1977	Alaska Coastal Zone Management legislation
	Inuit Circumpolar Conference organized
1979	Federal/State Land Use Planning Commission terminated
	NSB completion of Phase I, CZM Planning
1980	Alaska National Interest Lands Conservation Act
	1007 study on Arctic Policy mandated
1982	Arctic science and policy legislation introduced and passed in U.S. Senate
1983	Inuit Circumpolar Conference admitted as Non-Governmental Organization at the United Nations
	Third Inuit Circumpolar Conference developed working papers on Inuit Arctic Policy providing valid and

indigenous peoples and documented the range and importance of subsistence activities. The Committee's report advocated the need to settle Alaska's native land claims and the need for coherent Arctic research policy.[14] The report was published in 1968, the year of the Prudhoe Bay oil discovery.

Also in 1968 Alaska Governor Walter Hickel organized Alaska's NORTH Commission to focus upon the United States' Arctic resource development potential. This initiative was abandoned, however, as Hickel was selected by President Nixon to be his first Secretary of the Interior.

The Alaska Native Claims Settlement Act passed Congress in 1971. Section 7 of the Act created the Joint Federal State Land Use Planning Commission (FSLUPC) which was to make recommendations of future status of Alaska lands. It continued the work of the Federal Field Committee by assembling information about lands and resources.[15] The Regional Profiles published as a result of the FSLUPC were a landmark in terms of comprehensive information about the Arctic and other Alaskan regions.

In 1973 the Arctic Peoples Conference was held in Copenhagen. The Conference was an expression of an Arctic land claims movement which began in Barrow in 1964 with the organization and aboriginal land claims of the Arctic Slope Native Association. The Arctic Peoples Conference expressed the growing cooperation among Canadian and Greenlandic Inuit, the Scandinavian Saami community, and the governments of Canada and Denmark. In the decade between 1965 and 1975, the Greenlandic community, many of whom attended the University of Copenhagen, mounted an effective campaign which won political respectability for Greenland's homerule movement. The Greenland homerule movement brought the Inuit land claims movement to Denmark and Greenland, and provided focus for the Arctic Peoples Conference. But the press of post-settlement land selection planning and corporate organization prevented any Alaskan Inuit leaders from attending the Copenhagen Conference.

The land claims movement was taken up in Canada by the Inuvialuit's regional organization, the Committee for Original Peoples Entitlement (COPE), then headed by Sam Raddi, a charismatic Inuk (Canadian Inuit) from Inuvik. The COPE land claims led the Canadian Department of Indian Affairs and Northern Development (DIAND) to sponsor the organization of the Inuit Tapirisat of Canada (ITC) to organize and lobby regional claims and settlements in Ottawa.

In 1975, The North Slope Borough was asked to support Canadian Western Arctic Inuvialuit opposition to the initiation of Beaufort Sea offshore operations off Tuktoyaktuk, Northwest Territories, Canada. In response the Borough called upon Alaska's United States Senator Ted Stevens, an active member of the United States/Canadian Interparliamentary Union, to intervene with Canadian authorities. As a result, Dome Petroleum's Beaufort Sea drillship explorations were postponed for a one year period beginning in 1977.

In June 1976, Mayor Eben Hopson attended a meeting sponsored by the Outer Continental Shelf Environmental Assessment Program's Arctic Project. The meeting was between Canadian Arctic environmental scientists employed on Canada's just concluded 10-year Beaufort Sea Project, and American scientists employed in OCSEAP's new Arctic project. Mayor Hopson heard the Canadian scientists relate their conclusions that imprudent and environmentally unsound offshore drilling operations were being perpetuated in Dome's drillship operation. The Canadian scientists warned that the American-oil-industry controlled Canadian operations off the Tuktoyatuk peninsula did not have the technical capability to operate safely given the dimensions of sea ice mechanics in that area. Due to west flowing currents, should an oil spill occur in the Canadian Beaufort Sea, the Alaskan Arctic coastline would become polluted. Through a series of miscalculations (on the drillship Explorer II at Hunt Oil's Kopona well) in the construction of well casing, including drilling to 10,000 feet without completing supportive casing, a blowout of high-pressure fresh water encountered at 6,000 feet caused the fresh water to boil up and erode around the outside of the partially completed structure, causing it to tip over. The Canadian government's Beaufort Sea Explorations program did not accept the scientific conclusion regarding unsound Beaufort drilling operations.

Alarmed by what he had heard, Hopson began efforts to develop international standards for Arctic coastal zone management. Mayor Hopson sought and won the Alaska Democratic Party's Congressional nomination in 1976, and devoted his campaign to the single issue of Arctic policy development. Arctic policy was thus introduced into public political debate in Alaska for the first time. It was through this debate that Alaskans throughout the state first became aware of the potential damage to their Arctic coastline from possible Canadian Beaufort Sea oil spills. Recognizing that national and international cooperation would be necessary to ensure Arctic environmental protection, the North Slope Borough began to actively seek means of international Arctic rim cooperation. At that time, Senator Mike Gravel (working at the United Nations Law of the Sea Conference) introduced the concepts of Arctic regional environmental protection and the importance of Inuit participation in Arctic policy formulation. Former United States Ambassador to the United Nations Law of the State Conference, John Norton Moore, was inspirational as he sought strongly to promote United States interest in Arctic policy development. Mayor Hopson initiated discussions with the United States Department of State to express the concerns of Arctic residents that oil and gas exploration and development activities were technologically unsophisticated in terms of oil clean-up capability. However, it was clear that the Borough's and the State of Alaska's small population would not be voice enough to spur United States agencies into international Arctic rim cooperative discussions in a timely manner. Thus, international Arctic environmental protection discussions were initiated on an indigenous circumpolar basis.

The 1973 Arctic Peoples Conference held in Copenhagen was used as a model for organization of the Inuit Circumpolar Conference (ICC). In the spring of 1976 Hopson invited Alaskan, Canadian, and Greenlandic Inuit leaders to Barrow to initiate an international Inuit community organization devoted to protection of the Arctic environment. With the help of Alaska's Senator Mike Gravel, the Borough's Arctic rim organizational initiative was underwritten by a grant from the Lilly Endowment.

The Greenland delegation to the Barrow Conference included much of the political leadership of Greenland's new Siumut (Forward) Party, which had championed homerule for Greenland. The Canadian delegation was split between the Eastern Canadian Inuit, represented by the ITC, the Northern Quebec Innuit Association, and the Western Arctic Inuvialuit's COPE. The Inuvialuit are Canada's part of the North Slope Inupiat community, closely related to the Inupiat citizens of the NSB. They strongly supported the NSB/Greenland desire to organize the ICC. However, the Eastern Arctic Inuit, more under the influence of the Canadian government, were reluctant to organize and were concerned about possible Canadian government reaction.

Canada's Beaufort Sea operations posed clear environmental risks. Beaufort operations were particularly of concern to Inuit because they were begun and conducted without proper consultation and involvement with the Inuvialuit's COPE. The Inuit agreed that a single, international coastal zone management regime was required for the entire North American Arctic coast. This was the primary motive behind the organization of the Inuit Circumpolar Conference.

UNITED STATES LOCAL ARCTIC POLICY

Coastal Zone Management

In 1972, the year the North Slope Borough was incorporated, Congress passed the Coastal Zone Management Act in response to land use conflicts in the United States coastal areas. An important precedent set in the Act is the role of state and local governments in developing coastal planning and management programs. Congress passed responsibility to the States for CZM development and the State of Alaska initiated its coastal management program in 1974, finally passing legislation in 1977. This legislation gave local governments an important role in developing local coastal programs. The North Slope Borough participated in coastal management programs from their inception, thus laying the groundwork for rational planning in the Arctic.

The Borough Planning Department recommended that Coastal management program development take place in four phases, to correspond with four Coastal areas of the Borough. The Borough's Coastal Management Program states that,

> "The first phase would focus on the Prudhoe Bay area, that part of the Borough coast lying between the National Petroleum Reserve-Alaska (NPR-A) on the west and the Arctic National Wildlife Range on the east. This is the coastal area that roughly coincides with imminent State and Federal offshore lease sales and presents the most immediate pressure from future development. Phase II would include the Arctic National Wildlife Refuge and adjacent offshore areas and would be based partly on data being developed by the State and Federal governments in preparation for the joint Federal-State OCS Beaufort Sea lease sale. Phase III would include the NPR-A and offshore areas and would depend heavily on material development by the Department of the Interior's NPR-A land use study. Phase IV would comprise the remainder of the western area of the Arctic coast not included in Phase III. In developing its coastal management program, the North Slope Borough has adopted this approach."[16]

The objectives and policies of the NSB Coastal Management Program are as follows.

Objectives

(1) To preserve the traditional Inupiat lifestyle and culture.

(2) To give priority and protection to subsistence activities and areas.

(3) To allow competing uses only where they do not threaten subsistence resources and their habitat.

(4) To protect all fish and wildlife resources and habitat on the basis of total ecosystems and consistent with subsistence use.

(5) To require the protection of endangered and threatened species and their habitat.

(6) To protect and preserve natural and ecological values.

(7) To ensure maximum control by Inupiat over their own destiny while recognizing State and national interests including, but not limited to, the State and national interest in petroleum exploration and development.

Policies

(1) SIGNIFICANT SITES PRESERVED. Sites of historic, archaeological and cultural significance must be preserved.

(2) CONSERVATION AREAS. Areas which are critical to the maintenance of significant fish and wildlife populations must be exempted from incompatible surface use. A buffer area must be maintained to protect these areas from disturbance.

(3) LAND CONVEYANCES. The sale or conveyance of public lands into private ownership should be discouraged, except for Native Allotments or where provided for under the terms of the Alaska Native Claims Settlement Act.

(4) HABITAT PROTECTION. Fish, wildlife and habitat protection programs, including enforcement, must be particularly intensive during any industrial development including, but not limited to, petroleum development.

(5) REHABILITATION. Upon termination of petroleum exploration or production, or other industrial activity, all land must be restored to its previous state as closely as possible, except where this would cause greater environmental damage.

(6) SCALE OF DEVELOPMENT. Areas should be opened to petroleum exploration and development only in a sequence and on a scale

which allows effective management and enforcement of lease stipulations and local, State and Federal regulations.[17]

With these objectives and policies in mind, the Borough began the task of preparing phased coastal management programs. This involved: documenting traditional land use and subsistence areas,[18] classifying lands according to their fish and game habitat and suitability for development, identifying Conservation and Seasonal Conservation areas, areas of historical and cultural value, sensitive habitat areas, and zones of preferred development. Concurrently the Borough began development of a Comprehensive Plan, based on zoning and requiring use permits on conditional bases to ensure Borough-wide environmental protection. For example,

> "the Borough envisions that all lands (and waters) within the North Slope Borough, including the Prudhoe Bay Coastal Area, with the exception of the village selections under Section 12(a) will be zoned by the Borough as a wildlife enhancement zone. The uses allowed in this zone would be all activities contributing to the perpetuation and enhancement of wildlife and wildlife habitat and subsistence activities. Uses allowed on a conditional basis and requiring a conditional use permit to insure sound environmental location and practices would be oil and gas extraction and related activities and tourism and recreation."[19]

Because of the Coastal Zone Management Act and the important local government provisions of the Alaska Coastal Management program, the development of the Borough's Coastal Plan will become the principle program for controlling development impacts in the Coastal Zone. The Coastal Zone Management Act of 1972, as amended (16 USC 1451 et seq.) requires consistency of Federal activities with the states' coastal programs, including approved local government coastal programs. Thus, with local representation on the Alaska Coastal Policy Council charged with the development of standards and with the approval of district management programs, the local governmental unit is afforded the opportunity to have Federal and State actions and activities in the coastal area consistent with local government management plans.

In 1978, the Borough prepared a Coastal Zone Management Program for the Prudhoe Bay area. This Management Program formed the basis for the subsequent mid-Beaufort Sea Coastal Management Program (CMP) and Zoning Ordinance.

Due to federal, state, and industry opposition, the mid-Beaufort CMP and Ordinance were withdrawn from Coastal Policy Council consideration, and on December 4, 1979, an interim zoning ordinance (Serial No. 75-6-6) was adopted. The Interim Zoning Ordinance provides the Borough with a mechanism for exercising control over petroleum development activities in the mid-Beaufort coastal area until a CMP is approved and/or a comprehensive Borough-wide zoning ordinance is adopted by the Borough Assembly.

The North Slope Borough is committed to undertaking the development of plans and ordinances to exercise the powers of land use planning and control required by the State of homerule boroughs and to implement the Prudhoe Bay Coastal Area Management Program. However, since well in excess of 90 percent of the lands and waters of the Prudhoe Bay Coastal Area are in the ownership of the State and Federal governments, the Borough plea for adherence to local plans and ordinances must be by virtue of the doctrine of Federal and State consistency.[20]

NSB'S Comprehensive Plan

The NSB's Comprehensive Plan provides regulations for the conservation and preservation of the Inupiaq character of life, as well as guidelines for the systematic and orderly development of the villages and the various natural resources of the Borough. The current comprehensive planning effort was initiated in recognition of the need for a plan and implementing ordinances to guide and control development in all areas of the Borough, not just in the mid-Beaufort coastal zone. Thus, the Comprehensive Plan addresses the entire Borough jurisdictional area. Associated with the Comprehensive Plan are Land Management Regulations which comport with the Comprehensive Plan.

The Plan addresses activities ranging from land ownership and land use, to housing and employment. However, goals which serve to protect subsistence resources and preserve traditional Inupiaq culture are fundamental to all issues. The Plan is also designed to prevent poorly planned and executed development which could threaten the biological ecosystems which support subsistence and the Inupiat culture.

Recent experience has also shown North Slope residents that significant direct and indirect benefits are derived from resource extraction in terms of jobs, personal income, and capital improvements that bring better housing, schools, health facilities, transportation and communication, safe solid and liquid waste systems, safe drinking water, public safety, and many other improvements. Assuming revenues derived from resource extraction continue to be invested wisely, these physical and program improvements will benefit the Borough residents for generations.

The purpose, then, of the Comprehensive Plan is to minimize the negative impacts of resource development upon subsistence resources and the Inupiat culture while maximizing the economic benefits of such development. Borough policies encourage industrial and commercial development that does not substantially reduce subsistence resources or disrupt the Inupiaq way of life. The Borough works with industrial and commercial interests who will cooperatively coordinate with the Borough to realize beneficial development that achieves these goals.

The Borough has acknowledged the importance of cooperation and local participation in the planning process, having made a commitment to meet this need by providing local communities an opportunity to participate in the identification of issues, goals, and objectives appropriate to their respective areas. The comprehensive plan is a cooperative public expression of desired areas and characteristics for land and water resource utilization embellished with broad public statements of goals and policies, including agreed upon recommendations for implementation.[21]

REGIONAL INUIT CIRCUMPOLAR RESPONSE TO ARCTIC DEVELOPMENT

While the NSB was working with State and Federal organizations to focus attention on the need for Arctic policy, it became clear that Inuit were in the best position to begin cooperative international efforts to further Arctic rim environmental protection. Arctic environmental protection goals, Inuit subsistence issues and discussions of cultural survival were addressed in the first Inuit Circumpolar Conference, (ICC) held in 1977. At that time there were critical land claims issues in Canada and Greenland, especially Greenland, which was beginning to look to Alaska for political and economic support for homerule aspirations.

The successful organization of the ICC, overcoming the political anxieties of the Eastern Canadian Inuit, resulted in a strong international Inuit community organization, which today is a non-governmental organization (NGO) member of the United Nations. The ICC is composed of Alaskan, Canadian, and Greenlandic Inuit regional associations. From each country eighteen delegates are elected from the associations. The total number of delecates to the ICC general assembly (which meets once every three years) is fifty-four.

The ICC has been a successful vehicle for achieving solutions to Arctic problems. Not only are communications firmly established among the Inuit of Canada, Alaska and Greenland, but the Inuit of each country work directly with the governments involved, thus providing a successful forum in which to address Arctic policy issues without the encumbrance imposed by national bureaucratic or diplomatic channels. The ICC was an effective vehicle in the Borough's campaign to restore Inupiat subsistence bowhead whaling rights in 1977 at the special International Whaling Commission meeting in Tokyo. And it was effective in Greenland's 1981-82 campaign opposing the Canadian Arctic Pilot Project aimed at transporting natural gas by ice-breaking tanker through the Davis Strait.

Professor Lincoln Bloomfield of the Massachusetts Institute of Technology has pointed out that only the Inuit have initiated sustained Arctic international cooperation. "It is a mark of the times that the only continuing Arctic forum to date is a Circumpolar Conference of Alaskan, Canadian and Greenlandic Inuit, initiated at Barrow, Alaska in June 1977. Transarctic diplomacy was thus pioneered not by the six governments of the adjacent states, but by a non-governmental 'transnational' association of Native peoples." (emphasis added)[22]

FEDERAL ARCTIC POLICY PRECEDENTS

While it is clear that there is no definitive United States Arctic Policy, it would be an oversight not to underscore certain Federal actions which have set some precedence for Arctic Policy. The Coastal Zone Management Act has set a precedent in terms of local involvement in Coastal planning. A few other Federal actions regarding Arctic Policy development merit attention.

The 1007 Study

Public Law 96-487, the Alaska National Interest Lands Conservation Act (ANILCA) was enacted in 1980. At the request of the North Slope Borough, Congress included Section 1007 of ANILCA, which became the first Congressional mandate to consider Arctic regional policy, specifically Arctic research policy. Section 1007 was included at the insistence of the NSB over the objections of many who saw no place for Arctic policy mandates in this legislation. The Borough sought a wide Arctic policy mandate, not necessarily connected only with Arctic research.

Compromise was reached by attaching the question of national Arctic research policy to the question of the future of the mothballed Naval Arctic Research Laboratory (NARL) in Barrow. Section 1007, calling for national Arctic research recommendations to be made in Congress, was the precursor to the national Arctic Science Policy legislation. The study recommended the inclusion of Native representatives on any research Council established to provide Arctic research policy guidelines.[23]

Presidential Memorandum

In 1971, national policy on the Arctic received attention with National Security Decision Memorandum 144. This Memorandum underscores the importance of Arctic environmental protection and international Arctic rim cooperation: "The President has decided that the United States will support the sound and rational development of the Arctic, guided by the principle of minimizing any adverse effects to the environment; will promote mutually beneficial international cooperation in the Arctic...."[24] This Memorandum additionally created the Interagency Arctic Policy Group (IAPG) which was vested with responsibility to oversee implementation of United States Arctic Policy. In 1982 the IAPG noted, in evaluating United States Arctic Policy, that current administration budgetary policies may lead to the conclusion that environmental Arctic responsibilities could be transferred to private developers. More importantly, however, the IAPG concludes that the Arctic must be viewed on a regional basis as the Arctic activities of any one Arctic rim nation will impact other Arctic areas: "Geo-politically, the configuation of the Arctic Basin and immediate Sub-Arctic areas...is such to ensure that domestic offshore development programs or marine transportation activities by any one Arctic state will have potential impact upon the interests and peoples of other Arctic/Sub-Arctic states."[25] The IAPG report also confirmed the Inuit position that current Arctic oil spill clean-up capability does not exist.

Supreme Court Favors Regionalism

The Supreme Court decision regarding Windfall Profits Tax legislation of 1978 provides special consideration regarding Arctic private developers. The tax on profits accruing from the OPEC price increases during the mid-1970's was challenged in court by the oil and gas industry. One of the arguments made against the constitutionality of the tax was that Arctic production tax exemptions violated the equal treatment principle. Recently, the U.S. Supreme Court upheld the Windfall Profits Tax's Arctic exemptions as justified due to disproportionally high Arctic operating costs. We are studying this Court decision as a precedent for development of broadened United States Arctic regional policy formulation in the areas of habitat protection, resource development, education, health, transportation and communication.

The Arctic Policy Legislation

Science and research are usually agreed to be the area where policy agreements are most likely to be reached. In 1982, Alaska's freshman United States Senator Frank Murkowski introduced Arctic Science Policy legislation as his first major legislative initiative. Co-sponsored by Alaskan Senator Ted Stevens, and the late Washington Senator Henry Jackson, two of the Senate's most influential members, the Arctic Science Policy Bill passed the United States Senate on June 27, 1983. After some resistance, the specific involvement of the Arctic's indigenous residents in the work of the National Arctic Science Policy formulation, is likely to become a mandate of this legislation as the United States House of Representatives considers the bill further. The need for close involvement of Arctic indigenous people in Arctic policy formulation is a national need, rather than a local requirement of a small, regional minority ethnic group.

We are hopeful this legislation will finally realize our long-term goal of establishing a basis for thoughtful development of a comprehensive United States Arctic policy: one that balances environmental protection and indigenous survival with reasoned development; one that recognizes social science and research in the

Arctic as of equal importance as research to benefit Arctic oil and gas development.

INUIT ARCTIC POLICY OBJECTIVES

Given the mandate and means to plan national and international Arctic policy, what policy objectives should we pursue?

Research

The most urgent requirement is for a national (and necessarily international) Arctic science and research policy able to establish a clear and coherent national Arctic research program. Such a research program should address a suite of scientific problems concerned with environmental protection in relation to resource exploitation, air pollution, climate change, and a better understanding of the social, physical, and biological environment of the Arctic. Arctic science and research must involve international cooperation, on-going bio-acoustical sea mammal impact research, ice/structural dynamics, oil-spill recovery techniques and wildlife habitat protection. We endorse following conclusions of the Polar Research Board in terms of Arctic research:

> "United States Government science policy should include a commitment to the support of scientific research in its Arctic territory and in other areas of Arctic interest, as a necessary and integral part of its national policies for economic, technical, and social development, resource development, environmental protection, national security, and international cooperation in the Arctic."[26]

Inuit Involvement

In recent Arctic Science and Policy hearings before the United States House of Representatives Sub-Committee on Science, Research and Technology, Alaska's Senator Murkowski and Representative Young made strong statements in support of indigenous inclusion to decision-making bodies created by the legislation. Inuit involvement in all aspects of

Arctic policy development must be maintained. Frank Griffiths, noted Canadian scholar maintains, "To be effective, a northern foreign policy must secure the participation of Canada's Inuit people."[27] While the United States government has, to a degree, embraced the value of Inuit input, such input continues to be hit or miss.

The United Nations has admitted the Inuit Circumpolar Conference as a Non-Governmental Organization, recognizing the commitment of Inuit to Arctic environmental protection and cooperation, and recognizing the value of Inuit traditional knowledge and culture. As American Arctic residents, we respectfully request the same recognition of our commitment from our State and Federal governments.

Inupiaq, Language of the Arctic

We must regard Inupiaq as an important Arctic asset held commonly in trust by the United States, Canada and Denmark. It is the strategic language of Arctic policy planning, assessment, and local implementation. This valuable asset, which contains an Arctic biological code, should be protected as a matter of national Arctic education policy. Fortunately, Greenland operates in Kallallit (Ka-lath-lit), a dialect very close to our own Inupiaq. By developing modern communication linkage between Barrow and Greenland, we hope we can transfer Inuit-language, management, and education systems used in Greenland to Barrow and other American Arctic communities.

International Arctic Agreements

The Porcupine caribou herd has served as a symbol for the need for international Arctic wildlife management and conservation agreements. Yet, we still have been unable to agree upon a Porcupine caribou treaty.

The United States/Canada/Mexico Migratory Bird Treaty should clearly recognize indigenous subsistence spring hunting rights in Alaska and Canada. The United States/Soviet Migratory Birds Treaty which guarantees subsistence spring hunting in the Arctic can be utilized as a model.

The Borough has pursued these objectives for a decade with no results. International Arctic wildlife treaties must be viewed much more broadly than in the past. They must incorporate habitat management principles which recognize wildlife habitat as the significant use of the Arctic, requiring all other uses, including energy production, to be compatible.

Traditionally Inuit traveled freely through the Arctic. The Jay Treaty between Canada and the United States confirmed the right of free passage of aboriginal people between Canada and the United States, based on customary forms of Indian travel and trade. Current customs and immigration policies should be modified to reflect the intent of the Jay Treaty, i.e., to allow for free and unrestricted Arctic travel and trade by Arctic indigenous peoples.

Law of the Sea (LOS) Treaty negotiations have far-reaching Arctic implications; yet have seldom reflected the concerns of the Arctic-rim indigenous population. Inuit concerns must be considered in LOS Arctic ocean discussions. Will all nations have the right to negotiate Arctic Oceans policy, or will specific Arctic LOS decisions be made by those nations bordering the Arctic Ocean?

Restricted Drilling Pending Proven Clean-Up Capability

Arctic policy development must necessarily include a review of the Beaufort Sea OCS lease sale litigation which preceded the United States' first Arctic offshore oil and gas lease sale held in state and federal waters in 1979.

Our defense of the Beaufort Sea began in 1978, when the North Slope Borough held a meeting with the legal directors of all national environmental and wildlife organizations in Washington, D.C. It was agreed to join together in the legal defense of the Beaufort Sea. The Borough argued in state and federal courts against the proposed sale on the basis that tracts north of the Barrier Islands were exposed to sea ice hazards and should be delayed until adequate exploration technology could be developed and tested.

The most glaring technical deficiency was, and remains today, the industry's inability to recover oil spills, especially during spring breakup. A test of oil spill clean-up techniques in the Spring of 1983 proved disasterous. After flares dropped from helicopters to boom-encircled oil in slush ice conditions failed to ignite the oil, it was hand-lit. The booms caught fire and sank; the oil remained.

The courts responded by upholding both the State's and the Interior Department's leasing decisions. Nonetheless, in confronting the Federal and State government over its first lease sale in the Arctic, the Inuit attained important State and Interior imposed seasonal drilling restrictions on offshore exploratory drilling, which required the operators to cease drilling during spring breakup, and during fall freeze-up. This was to protect the migrating pathway of the Bowhead whale during spring and fall migrations.

Unfortunately within the past two years, industry has begun an effort to take away these hard won seasonal drilling concessions. In addition, the first mobile Arctic steel caisson structure for Beaufort

Sea use has been built for Gulf Oil for use off Stokes Point, Yukon Territory. This has renewed debate about industrial Arctic oil spill containment and recovery capability. The NSB maintains not a single Arctic oil recovery innovation has been introduced or tested since 1979 to warrant permission to drill in broken ice conditions, or to drill without a gravel island base.

Arctic oil spill recovery capability is an important national and international Arctic policy issue. Will Arctic offshore production be allowed to begin without seasonal operational limitations in the face of the industry's inability to recover oil spills?

Arctic Native Land Claim Settlements

A critical objective is to define, in clear terms, national Arctic policy toward the indigenous people of the Arctic. Aboriginal rights in and titles to the circumpolar region or parts of it must be settled before development proceeds in that region. A fair and just settlement of Inuit rights and claims can only be achieved before development occurs. Presently, the following situations exist in the circumpolar region: there are forms of exploraton and development proceeding in Canadian areas of the circumpolar region where Inuit rights and claims to the land and offshore have not yet been settled; a large part of Greenland and its offshore are presently subject to mineral, oil and gas leases and other concessions granted by the government of Denmark when Inuit rights and claims in these areas have not yet been settled; and large parts of the offshore of Alaska are presently subject to mineral, oil and gas leases, concessions and permits granted by the United States, when in fact Inuit rights and claims in these areas have not yet been settled.

Recently the Inuit Circumpolar Conference undertook to begin a review of the Alaska Native Claims Settlement Act of 1971. The ICC's Alaska Native Claims Settlement review, now underway, will be aimed at prompting international standards of justice for all Arctic indigenous land claims settlements.

Subsistence Hunting: An Inalienable Right

There is widespread concern about native subsistence hunting and fishing rights throughout urban and rural Alaska, across the Arctic, and among international environmental groups. The Inuit must not be made to sacrifice their culture and subsistence rights as the price of either development or national political tradeoffs.

In 1976, Jimmy Carter was elected President with the strong support of the American environmentalist community. The Carter Administration responded by appointing environmental activists to high government posts, and by supporting the political objectives of the environmentalist lobby. One of these was the complete abolition of commercial whaling, also a stated objective of the previous Nixon Administration.

The campaign to abolish commercial whaling was good politics because it enabled the government to join a popular conservationist campaign without suffering industrial political reaction. The United States had no commercial whaling fleet. But Inupiat subsistence whaling did still occur. In order to strengthen American abolitionist influence at the International Whaling Commission, the Department of Commerce's National Marine Fisheries Service joined with whale conservationist organizations to induce the IWC to impose its ban on subsistence bowhead whaling. This threat to Arctic indigenous subsistence whaling rights was a significant factor in the NSB decision to host the organizational meeting of the Inuit Arctic Circumpolar Conference in July, 1977, just days before the IWC met in Australia to ban bowhead whaling.

If the United States is to meet her international Arctic stewardship responsibilities, she must uphold Arctic indigenous subsistence hunting rights as inalienable. The Inuit have demonstrated that self-regulation of bowhead subsistence whaling, by the Alaska Eskimo Whaling Commission, works and is a satisfactory alternative to total federal management.[28] The relationship between Inuit and our Arctic wildlife is an important national Arctic asset which should be protected by national Arctic regional policy.

Arctic Regional Communications

America's Arctic political and social strength would benefit greatly from the development of a modern, multi-modal communications system linking all North American Arctic coastal villages, including those of Greenland, into a common telephone, data, television and radio network.

This would revitalize our Arctic indigenous languages and expand educational and health-related informational programming to the Arctic. And it would enable the 100,000 North American Arctic residents to participate in 20th century communications and education experiences.

Industrial Service Centers: Practical Habitat Conservation

Both as a wildlife habitat conservation measure, and to provide economic opportunity to Arctic residents, oil field service operations should be located in compact, well designed oil field industrial centers planned, designed, owned, and operated by Inuit. We advocate the development of an Arctic rim industrial service base siting plan similar to the plan which was considered for the Shetland Islands.[29]

We need to insure that the wasteful industrial sprawl of Prudhoe Bay is not repeated. The NSB's Kuparuk Industrial Center in the developing Kuparuk River Unit, now under construction, is a prototype based upon the experience of North Sea service bases in Norway and the United Kingdom, and is expected to become the definitive model of Arctic development.

Arctic Roads Access Limitations

Specific national Arctic regional policy is needed to foreclose the possibility of private vehicle access to the Arctic via the Trans-Alaska pipeline haul road penetrating the Arctic, and transiting our Arctic wildlife habitat. National Arctic policy on public access to the Arctic should be similar to that which restricts private vehicle access to certain national parks. Public access should be restricted to public conveyance.

A test of the NSB planning and zoning powers is to be seen in the State of Alaska's management of the Trans-Alaska haul road within Borough boundaries. This road, recently named the "Dalton Highway" after a well-known Fairbanks engineer, was zoned by the NSB for industrial use only, and has been closed to the use of private automobiles. Public use is by tour bus, only. This zoning was required as a public safety measure, and to protect Arctic wildlife habitat from severe degradation. The State of Alaska has respected the NSB's ordinance closing the Dalton Highway to public use. But there is strong public pressure, particularly in Fairbanks, to open the road to public use all the way to the Arctic coast, year-round. Recently, Alaska's

State Administration asked the State/Federal Land Use Council, established by Congress with the Alaska National Interests Lands Conservation Act of 1980, to take up the question of public haul road access for public debate once again. The policy issue riding on the question of access is both environmental and political. Will the State and Federal government continue to defer to and respect the NSB's land use planning and zoning on State and Federal land?

Rather than shrink from local Arctic municipal land use planning and zoning, State and Federal Arctic policy should embrace local land use regulation as a traditional solution to land use conflicts. Supervention by the State should be considered only under the most serious and difficult circumstances.

Protection of Tundra via Permitting

The Federal government proposes to withdraw protections from vast Arctic wetland plains, and take the United States Corps of Engineers out of the active Arctic land use regulation. The Corps has had the responsibility for issuing permits to those who would perform varous activities on wetlands. The Corps' permitting process has provided a much needed review process of proposed activities on fragile Arctic tundra.

Clearly, it is in our national interest to hasten Arctic land use permit reform without neutralizing traditional local planning and zoning authority now in place. And we believe the Corps of Engineers should continue to enforce national Arctic wetlands protection. We should not reduce Arctic habitat protection in the name of Arctic oil and gas permit reform.

Toward permit reform, the NSB has joined with the United States Fish and Wildlife Service, and the Alaska Department of Natural Resources to develop a comprehensive Arctic geo-processing system. We have designed automated regional geographic information system to process Borough, State and Federal permit applications. We hope, thereby, to deflect the legitimate force demand for permit reform, to turn instead to improved data communications as a solution, rather than remove environmental protection safeguards.

The Arctic as Nuclear Testing or Disposal Site

The naivete of establishing the Arctic as a nuclear free zone given the routing of United States and Soviet submarines and aircraft has been recognized, yet we wish to be on record as advocating the Arctic as a Nuclear-free zone (ICC Resolutions 77-11, 83-01). Particularly of concern are proposals to utilize the Arctic as a nuclear testing or waste disposal site. Such nuclear-armed missile testing as the Pentagon is now planning over Arctic Canada[30] reflects a disregard of the health and well-being of the Inuit and is opposed by the Inuit community. Known hazards to human life and the environment of radioactive materials and the particularly fragile ecosystems of the Arctic which are vital to Inuit subsistence, necessitate our advocacy of restricting the Arctic to those uses which are peaceful and environmentally safe.[31]

CIRCUMPOLAR COMPREHENSIVE PLANNING

In conclusion, we support the concept forwarded by Professor Louis Rey of the Comite Arctique that the Arctic Ocean be conceptualized as a "Polar Mediterranean" in order to effect rational Arctic protection and planning:

> "Around the central ocean all states are interdependent and fight the same environmental battle, whether pollution is

> derived from their own operations, or introduced by industrial and human activities elsewhere.... there are many other economical or political considerations which enforce a basic need for a harmonious circumarctic cooperation: maintenance and adaptive evolution of the sociocultural patterns of indigenous people having common roots, consistent introduction of modern technology within traditional and sensitive areas (where any abrupt move leaves a lasting imprint), environmental control and protection of wildlife, intelligent management of mineral and biological resources, mutual agreement and understanding of the law of the sea as applied to the boreal ocean. This is an ambitious and challenging programme, but one of critical importance, demanding open international participation, and a comprehensive multidisciplinary approach to the problems of the Polar Mediterranean."[32]

Circumpolar environmental protection efforts must be undertaken, and require Inuit participation in order to assure success. Our local and regional Inuit governments and organizations have proven their capacity for facilitating Arctic resource-use conflict resolutions, for furthering Arctic international cooperation, and for reasoned Arctic planning.

We remain hopeful the United States will accept the challenge of Arctic policy development, and will do so utilizing the vast and, as yet, nationally underutilized expertise of the Arctic indigenous peoples.

FOOTNOTES

[1] Mr. Justice Thomas R. Berger, *Northern Frontier, Northern Homeland The Report of the MacKenzie Valley Pipeline Inquiries*, Vol. 1 1977, James Lorimer & Co. Canada. p. xvi

[2] "...[NSB] policies - both those designed to protect Eskimo residents and those planned to regulate the development and use of North Slope non-renewable and renewable resources - have embroiled the North Slope government with state, national, and international agencies." Gerald A. McBeath and Thomas A. Morehouse, *The Dynamics of Alaska Native Self-Government*, University Press of America, 1980, Washington, D.C. p. 83

[3] *Ibid*. p. iii

[4] The Constitution of the State of Alaska, Article X. Secs. 1, 2

[5] Alaska State Code, Title 29.

[6] *Anchorage Daily News*, March 24, 1972.

[7] *Anchorage Daily News*, March 24, 1972.

[8] For a detailed discussion of the efforts to legally prevent formation of the NSB, see *UCLA - Alaska Law Review*, Vol. 3, No. 1, Fall, 1973. "The North Slope Borough, Oil, and the Future of Local Government in Alaska", David H. Getches.

[9] Eben Hopson, *The Arctic Coastal Zone Management Newsletter*, October, 1977.

[10] *Resource Inventory Galbraith Lake*, North Slope Borough, May, 1979.

[11] Richard K. Nelson, *Hunters of the Northern Ice*, University of Chicago Press, 1969. p. xiv

[12] Alaska Consultants, Inc. *North Slope Borough Coastal Management Program Prudhoe Bay Area*. Anchorage, June, 1978. p. 24

[13] Jean Malarie, *The Last Kings of Thule*, E. P. Dutton, New York, 1982. p. 19

[14] *Alaska Natives and the Land*, Federal Field Committee for Development Planning in Alaska, Anchorage, October, 1978. pp. 533-546

[15] "Information that could aid in evaluating land values existed but was widely scattered. The Commission's resource planning team conducted inventories of factors such as timber or minerals that could be expected to establish land values. The Commission then made this information available to (Native) villages and regions." *Alaska Native Land Claims*, Robert D. Arnold, The Alaska Native Foundation 1976, 1978. p. 202

[16] Alaska Consultants, Inc. North Slope Borough Coastal Management Program Prudhoe Bay Area. Anchorage, June, 1978. pp. 3-4

[17] North Slope Borough, Coastal Management Program, 1979.

[18] Qiniqtuagaksrat Utuqqanaat Inuuniagninisiqun, North Slope Borough Commission on History and Culture, Barrow, 1980.

[19] Alaska Consultants, Inc. North Slope Borough Coastal Management Program Prudhoe Bay Area. Anchorage, June, 1978. p. 36

[20] The consistency argument of Coastal Zone Management plans have been somewhat undermined by a decision [by United States Secretary of Interior James Watt] that offshore drilling is not subject to consistency because the drilling is performed by private companies, not the United States or the Alaska government.

[21] North Slope Borough Comprehensive Plan, 1982.

[22] Lincoln P. Bloomfield, "The Arctic: Last Unmanaged Frontier", Foreign Affairs, Fall 1981, Vol. 60, No. 1. p. 90

[23] A Study of United States Arctic Research Policy and the Possible Roles of the Naval Arctic Research Laboratory, U.S. Departments of Interior, Defense, and Energy, Mandated by Section 1007, Public Law 96-487. pp. 68-74

[24] National Security Decision Memorandum 144, December 22, 1971.

[25] An Evaluation of Future Federal Levels of Effort in the Arctic in Relation to Foreign and Domestic Energy Development Programs. Interagency Arctic Policy Group, 1982. p. 2

[26] A United States Commitment to Arctic Research, National Academy Press, 1982. p. 2

[27] Franklyn Griffiths, A Northern Foreign Policy, Wellesley Papers, 1979. p. 40

[28] The Alaska Eskimo Whaling Commission (AEWC) exemplifies the high quality of Inuit leadership. The AEWC, reflecting the knowledge of Inuit whaling captains, has proven a reliable, effective, and credible interface with state, national, international, and environmental organizations. Research sponsored by the AEWC regarding Bowhead whale populations has been more accurate than other "scientific" measures.

[29] Marine Service Bases for Offshore Development, Alaska Consultants, Inc., for the Alaska Department of Community and Regional Affairs. July, 1976.

[30] Congressional Quarterly, May 28, 1983.

[31] Working Paper on Principles and Values for Consideration in a Draft Arctic Policy, Makivik Corporation, Montreal, July, 1983. p. 9

[32] The Arctic Ocean: A 'Polar Mediterranean', Professor Louis Rey, reprint from Rey: The Arctic Ocean: The Hydrographic Environment and the fate of Pollutants - the edited proceedings of a meeting organized by the Comite Artique International. p. 38

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The ARCTIC POLICY REVIEW

MAY 1983

COPE, CARC Join to Protest Stokes Point Project

Beaufort Sea in Jeopardy

In a February 23, 1983 press release, Peter Green, President of Committee for Original Peoples Entitlement (COPE) in Inuvik, attacked the plans of Gulf Canada to build a harbor at Stokes Point, on the middle of the Yukon-Beaufort coast about 65 miles east of the Yukon-Alaska border. Green said that the proposal represented an unfortunate setback in relations between Gulf and northern aboriginal interests. "I consider this to be a serious breach of trust and propriety on the part of Gulf," he said. "Gulf has obviously made the decision that it is prepared to risk the long-term economic, legal, and political stability of the entire Beaufort Sea region and its corporate relationship with the North, for the sake of some half-baked short term scheme of convenience." COPE's position was supported by the strong opposition of the Canadian Arctic Resources Committee (CARC) to the project.

Last summer, Gulf applied to the Department of Indian Affairs and Northern Development (DIAND) for permission to build a marine terminal at Stokes Point to support its oil exploration activities in the Beaufort Sea. Gulf argues that it needs a new port facility to accommodate its huge conical drilling unit (CDU) and mobile arctic caisson (MAC) which will arrive in the Beaufort this summer. These vessels must undergo inspection every two years and Gulf maintains that construction of facilities for this purpose must be started now. The proposal makes reference also to the feasibility of a road to be constructed through the North Slope to connect with the Dempster Highway.

The minister of DIAND, the Hon. John Munro, has stated that he considers the question to be outside the scope of the Beaufort Environmental Assessment Review Process (EARP), which calls for public review only of production and transportation stages of development, not exploration. CARC has expressed firm opposition to the permit being granted before the Beaufort EARP hearings, before the implementation of a regional plan for the Beaufort, and before a final land-claims agreement with COPE (now expected this summer).

Stokes Point is in the middle of the North Slope and lies in the heart of one of the most environmentally sensitive areas on the continent. It is the calving grounds of the Porcupine caribou herd and is important for marine mammals, waterfowl, and shore birds. Both the Berger inquiry and the National Energy Board recommended against building a pipeline through there. The Hon. Hugh Faulkner, former minister of DIAND, identified the North Slope as one of the few areas of Canada where environmental protection must be paramount and withdrew 5000 square miles, including Stokes Point, to establish a national park upon final settlement of the COPE claims. As Peter Green stated, "Settlement of the Inuvialuit land claims will create the economic and policy stability necessary for rational Beaufort Sea oil development."

Should DIAND grant the application—which is likely—Stokes Point will become the most bitter environmental issue of the 1980's. ■

On cover: David Blanket salmon fishing on the Yukon River near Mt. Village, one of the communities concerned about the impact of Bering Sea oil development. Photo: Jim Barker.

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Alma Keyes testifying 6 October 1981, at the OCS hearing at Emmonak, Alaska.

The Battle for the Bering Sea

Western Alaskans Unite in Opposition to OCS Sales

Amid a flurry of eleventh-hour lawsuits and threats of lawsuits, the Federal OCS Lease Sale 57 for Norton Sound took place as scheduled on March 15, 1983 drawing a total of $325.3 million in bids, with Exxon eagerly shelling out $264 million. Coming just one day after OPEC lowered its prices for the first time in its 22-year history, the sale marked a clear victory for Interior Secretary James Watt's controversial accelerated five-year OCS leasing schedule, also under legal attack nationwide.

The losers in this confrontation were the State of Alaska and freshman Governor Bill Sheffield, who crawled out from under the controversy to survey the damage done to his infant administration. His performance was bitterly attacked in the legislature for conflict of interest violations with one state senator calling for an investigation, the press was accusing him of flip-flopping on support for the sale, and his constituency in Western Alaska, who had delivered him 90% of their votes, was accusing him of betraying his campaign commitment to delay the sale. The controversy surrounding the sale had also dealt a crippling blow to his ambitions for budget reform which was facing hot opposition in the state legislature.

Norton Sound: the Record of Concern

The proposed federal sale of oil and gas rights to some 2.4 million acres of outer continental shelf has a history of strong opposition. In 1976, Gov. Jay Hammond asked Thomas Kleppe, President Gerald Ford's interior secretary, to delay for at least two years the sale then scheduled for 1978. He hoped that would provide for more environment studies.

Interior agreed to the request, and in August 1977 Kleppe's successor under President Carter, Cecil Andrus, rescheduled the sale for December 1981, a move hailed by then-Natural Resources Commissioner Robert LeResche as "responsive to our suggestions."

Later the federal schedule was redrawn and the sale set again for September 1982. Then, in April, 1980, Hammond again asked for another delay, this time to permit meshing with a proposed state sale in the same area. Andrus agreed, and the sale was set for November 1982.

The release of the Draft Environmental Impact Statement (DEIS) for the Norton Sound sale fueled new fears both among Native residents of Western Alaska and the state administration. The document, citing "worst case" situations, said oil spills could occur; walrus, seal, whale, wildfowl, and fish could die, and life for Norton Sound

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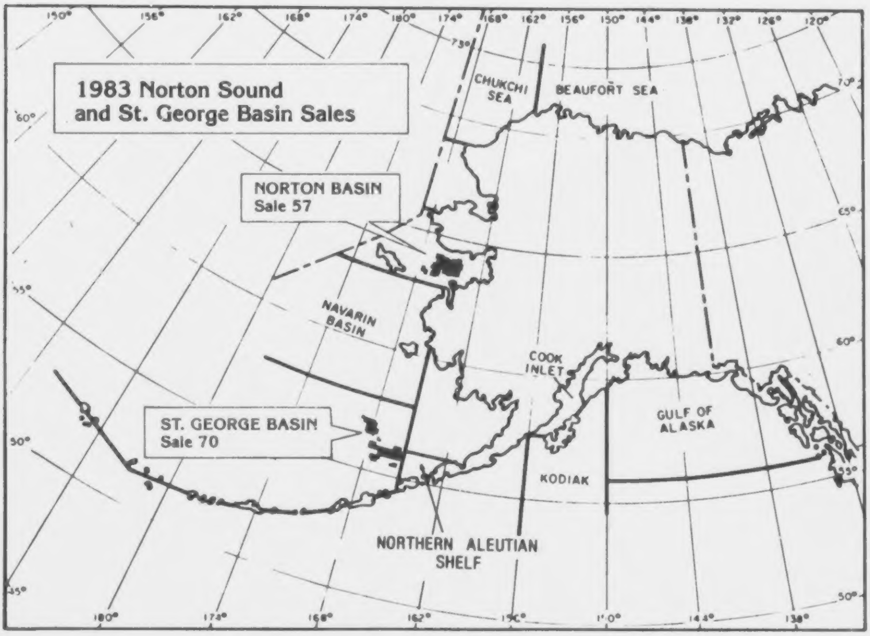


residents would never be the same.

In response to this, Hammond cancelled the proposed state sale in June 1982. That same month, the state joined California and several Native and environmental groups opposing Secretary Watt's accelerated five-year OCS leasing schedule. The following month, Senator Frank Murkowski jumped into the fray asking for an indefinite delay, "so that the region can be organized in terms of dealing with all of the ramifications of oil development in the area."

A ruling by a federal court in California in November 1982 again postponed the sale to March 15, 1983. The judge said that states must agree with the federal government's determination that petroleum exploration and development plans conform to state coastal zone management plans.

The DEIS Hearings

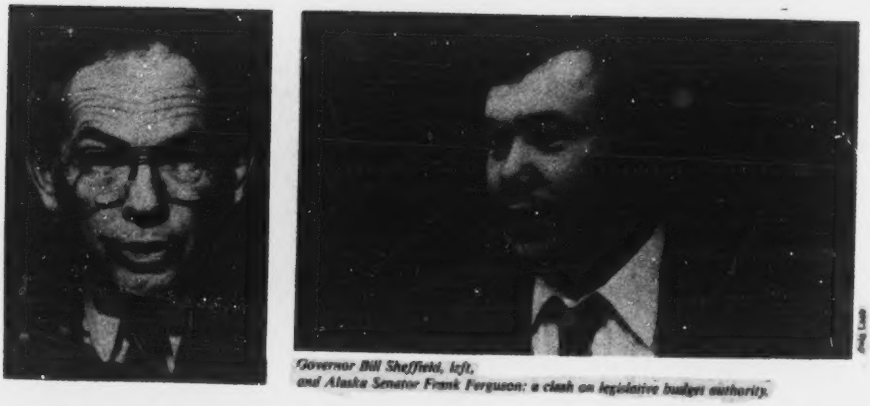
There had been no doubt about the mandate given to Sheffield by his Western Alaska constituency about the Norton Sound sale. They had several years to study and make up their minds. The message had come loud and clear on October 6, 1981 at Emmonak, Alaska, where villagers offered testimony on the Draft Environmental Impact Statement (DEIS) for the proposed Norton Sound Sale in which they called for a five-year delay in the sale.

At that meeting, residents were unanimous in their opposition. There are 20 Yup'ik and Inupiat Eskimo coastline villages who harvest the vast majority of their food from the waters of Norton Sound. The geographical isolation of these villages makes the replacement of subsistence foods by pre-packaged foods impossible.

Nearly 30 other Yup'ik and Athabascan Indian villages are located along the Yukon River and its tributary system. The salmon migrating up these rivers from Norton Sound are the cornerstone of the subsistence economy of these villages. There are another 25 Inupiat coastal villages north of Norton Sound which depend upon the walrus, seals, and whales, all of which migrate seasonally through Norton Sound.

Congress, in recognizing the economic importance of subsistence in this area, in December 1980 passed the Alaska National Interest Lands Conservation Act (ANILCA) which in part established the Yukon Delta National Wildlife Refuge, one of the nation's largest. One of the purposes of this refuge was "to provide . . . the opportunity for continued subsistence uses by local residents."

The Norton Sound DEIS referred to the Yukon River delta as being "one of the most important and productive waterfowl habitats in North America. It claims "over 24 million individuals representing at least 60 species of swans, geese, ducks, and shore birds." Furthermore, "the greatest concentration of geese in North America occurs in (the



Governor Bill Sheffield, left,
and Alaska Senator Frank Ferguson: a clash on legislative budget authority.

Yukon delta)." University of Alaska biologist Bud Fey warned that the danger posed by oil development in the area to the wildlife species "is a potential bomb of atomic proportions." Villagers and scientists agreed that Norton Sound's biology and natural forces had not been adequately studied and were poorly understood. They believed that Norton Sound is an area of such high biological productivity and sensitivity that it cannot be compared to other outer continental shelf (OCS) leasing areas.

Several severe geohazards were cited that aggravate the normal risks of oil and gas exploration in Norton Sound. Among those enumerated were moving ice, storm surges, gas-charged sediments in the sea floor, liquefaction of sea sediments, and the presence of thermogenic gas, earthquakes, current scouring, permafrost, superstructure icing, and bed sediment transport. People were convinced that proven oil-spill cleanup technology to match the wide variety of geohazards and weather conditions prevalent in Norton Sound has not yet been developed.

During October 1981, the BLM convened a meeting of scientists to discuss the current status of scientific knowledge about Norton Sound. The participants stated that "the erratic but fairly frequent flooding of the Yukon delta region by storm surges provides a mechanism for tremendous damage." They said that "by such flooding a spill could cover not merely the shoreline but the entire reigon." The scientists recommended that a predictive model for storm surges in Norton Sound be developed. This has not yet been done.

The Campaign Promises

By the time the gubernatorial campaign of 1982 was underway, the Norton Sound sale had been highly politicized. Running on a strong pro-subsistence and pro-development platform designed to please nearly everyone, hotel-chain-owner Bill Sheffield hadn't quite figured out how to reconcile these two frequently opposing activities and chose to procrastinate.

Responding to a questionnaire submitted by the Fisherman's Political Action Committee of the Alaska Fishermans' Association (AFA) on May 17, 1982, Sheffield wrote: "I am opposed to any offshore drilling in Bristol Bay and the Bering Sea at this time. There are ample on-shore areas with high potential for oil and gas development which should be explored prior to any development in the rich fisheries of the state."

On July 20, 1982, Sheffield wrote a letter to oil industry lobbyist James Linxwiler stating: "My impression is that OCS development can indeed coexist with Native cultures and societies. If we must utilize more remote staging areas, to preserve Native cultures and heritages, then so be it. Again, I do not feel that these conflicts are insurmountable. If risk levels can be reduced to negligible levels, and if this can be adequately communicated to all of us concerned, then I see little reason why OCS Sale 71 and the Western Alaska OCS Sales could not proceed."

Sheffield passed the ball to industry by transforming the issue into an industry public relations problem: "I feel that is incumbent upon the industry to educate we, the lay people, to insure that these devastating spills will never occur."

The Watt-Sheffield Compromise

After his inauguration in December, Sheffield came out publicly against the sale date, asking for a two-year postponement to gather more information. In early January, Sheffield phoned Watt and said that the sale stipulations must also include deletion of certain tracts in the path of the bowhead migration routes, and gave Watt a list of stipulations which had to be included in the notice of sale. Watt countered by saying that he would make every effort to accommodate the conditions required by the state, but made no concessions regarding delaying the sale. Industry officials openly speculated that Watt would try to accommodate the new Governor at the outset of his administration, and expressed hopes for a reconcilement. National environmental groups were less optimistic about the sale, and began preparing a suit. National Resources Defense Council attorney Sara Chase charged that the sale plan was seriously lacking in environ-

Continued next page

mental safeguards and protections for the migration path of the bowhead whale. She saw a suit as likely.

Villagers Protest the Compromise

The weekend of January 15 saw representatives of 73 western Alaska villages gather at Nome to call upon Secretary Watt to delay the sale for at least five years. The meeting, sponsored by the Association of Village Council Presidents (AVCP) and Kawerak Non-Profit Corporation, also passed a resolution requesting Governor Sheffield to sue the federal government under the provisions of the national Coastal Management Act to ensure "lease sale compliance with local desires and needs" should Watt go ahead with the sale.

While most of the village leaders felt that oil exploration in Norton Sound is inevitable, they said there were too many questions left unanswered for exploration to proceed at this point. They were also disappointed in the provisions of the Coastal Zone Management Plan, which—they were told—would protect local habitat and wildlife, and an additional plan which would ensure that local residents would be "fully and meaningfully" involved in Norton Sound oil and gas development plans. "How can democracy work if this is the feeling of 73 villages?" asked AVCP President Martin Ivan. "Are they wrong?"

The participants also discussed oil-spill-cleanup plans at length and remained skeptical. Henry Ivanoff of Unalakleet challenged industry assertions that they could adequately take care of oil spills after seeing a slide show on state-of-the-art cleanup techniques. "Looking at that equipment . . . it's not adequate," he argued. "You can deal only with small spills. If there is a large spill, then we will have problems." Oil-spill consultant Alan A. Allen admitted that the equipment was designed for small spills, but a number of such machines could be rapidly flown in from other places—Prudhoe Bay, Cook Inlet, and Anchorage to aid in the cleanup of a large spill. The villagers responded that such equipment had never been tested in Norton Sound conditions. "You think Eskimos are not educated," one village elder said. "But out there, we are more educated!"

Jim Barker

Above: Joe and Martina Phillip of Alakanuk gutting a seal. Below: Paul John, right, and his son Simeon of Toksook Bay pull up a bearded seal during spring hunting.

Jim Barker

Several villagers talked of ice scouring and ice build-up. One described an island not far from his home which was about 50 feet high. "We have witnessed the ice covering the island," he said. "The reason why? It is because of the force of the ice, especially with the wind behind it. There is really nothing that can stand in its way. It is very destructive. If there is an oil spill at this time, marine mammals will be killed!"

Lillian Lliabban of Akiak testified, "That lady out there, she's pretty wild when Nature takes over. I hear no answers from the oil companies! Maybe that's because there's no answers." Ivan Martin stressed that the oil was worth more kept in the ground. "It will stay in the same place," he said. "When we need it we can take it out."

There was much discussion on the political strategy needed to stop the sale. "Part of our problem," said Charlie Johnson, President of the Bering Straits Regional Corporation, "is that we have been reacting to what the federal government and the oil companies want to do. Let's go on the offensive, and make them react to what we want to do!" Ralph Anderson, administrative assistant to NSB Mayor Eugene Brower, supported the general consensus that it was necessary for local groups to develop their own social and employment programs to protect themselves from oil development impact.

Cecelia Foxy, right, Regina Andrews, and Joseph Mike testifying against the Bering Sea OCS sales at Emmonak.

The Washington Agreement

On January 25, Sheffield flew to Washington to meet with Watt. After the meeting, they jointly announced that the sale would proceed on schedule, but that the state had secured the requested environmental guarantees. "That was the best deal we could strike," Sheffield reported. "We needed to meet each other half way on this program." Watt, on the other hand, conceded that the new governor "won on all of his points during their meeting." Watt suggested that the wording of the stipulations could be worked out later, and Sheffield, much to his later regret, had complied.

Before the governor could leave town, the new stipulations were leaked to Alaska, where they raised a storm of protest. "In essence, Governor Sheffield let the Native people down," reported Gene Peltola, Vice-President of the Association of Village Council Presidents (AVCP) in Bethel. "The Sheffield-Watt accord is especially surprising in consideration of the faith and trust our people had placed in Governor Sheffield's promise to protect our interests and concerns in Western Alaska. We consider that a state of emergency now exists in Western Alaska which threatens our way of life and food supply. We will now consider every appropriate action to protect Norton Sound."

The Natives were not the only ones talking litigation. National environmental groups, closely following developments, were also incensed. "I don't know why Watt is so hell-bent on holding this sale at this time," said Eric Smith, the director of Trustees for Alaska, an environmental group which had recently joined Nunam Kitlutsisti in a suit against a testing well which was operating in Norton Sound without permission. Smith added that the technology to work the ice-pack of the Sound has never been demonstrated.

Rep. Tony Vaska (D-Bethel) phoned the governor to ask him why the state had conceded so much and asked why legal remedies were not exhausted before agreeing to the sale. Sheffield, surprised by the sudden opposition to the compromise, responded by saying that the stipulations were not yet published and were still under discussion.

The Western Fund-Raising Trip

Sheffield then left Washington for a fund-raising trip that would take him to Wall Street, Dallas, Houston, and Denver to help him pay off a $500,000 campaign debt. The trip had been organized by Doug Webb, Sohio's Director of State Government and Public Affairs. Accompanying Sheffield were two of his new cabinet appointees, Esther Wunnicke, Commissioner of Natural Resources, and Norman Gorsuch, Attorney General.

For much of the trip into oil country, the group flew in a private jet belonging to Ensearch, Inc. of Dallas, a mining conglomerate with operations in Alaska. Also on board was Sohio lobbyist James Linxwiler. Gorsuch, like Linxwiler, had been an employee of Ely, Guess, and Rudd, and had served as a lobbyist for Shell oil before his cabinet appointment.

Continued next page

> **"The issue before the question is survival. Survival for the majority civilization who's survival is contingent on energy. And, survival for the coastal Eskimos is contingent on the sea, the land, and its ability to provide for life."**
> **—Theresa Peoples, Stebbins.**

Above: left to right, Phillip Moses of Toksook Bay, Mike Albert of Tununak, and John Kelly of Emmonak at the Norton Sound sale hearing: more than 70 communities united in firm opposition to the sale.

Below: Katherine Utteryuk of Scammon Bay drying salmon at a Black River fish camp.

He later was to claim that his trip to Texas was necessary to assure a "smooth transition" for Shell's new lobbyist in Juneau. (Another Ely, Guess, and Rudd attorney, Gordon Evans, had been appointed by Sheffield to the state Board of Regents.) Sheffield's campaign pocketed $131,940 from this trip which was used to repay a personal loan that Sheffield had paid to the campaign fund.

As he returned to Juneau, Sheffield knew he was in hot water with both the Natives and the legislature over the propriety of his fund-raising and his failure to stop the sale. He held a news conference on January 31 defending his fund-raising saying, "It was all above-board. I see no conflict."

He also stated that he would not seek to delay the St. George Basin Sale in the Bering Sea if Watt agrees to the conditions aimed at protecting the environment, noting in particular the seal harvest on the Pribilof Islands. While Sheffield had succeeded in getting 11 tracts near the mouth of the Yukon River deleted in the Norton Sound sale, he had not requested the deletion of tracts near the Pribilof and Nunivak Islands as requested by the residents. (Since 1979, when diesel fuel from a grounded ship threatened important waterfowl habitat near St. Paul, local residents had taken keen interest in the environmental conditions of the sale.)

When asked about the governor's campaign letter to the AFA opposing the sale, press secretary Pete Spivey responded that the letter was only in reference to fishing grounds proper to Bristol Bay.

The Lease Sale Notice

On February 7, Sheffield's situation was not eased with the publication of the notice of sale and the stipulations. While the press noted that most of the requested state stipulations had been adopted, the crucial ones were either missing or altered. One condition that was absent would have required that the oil companies operating in Norton Sound set up a oil-spill cleanup response cooperative such as that operating in the Beaufort Sea.

Even more important was the condition that the federal government be required to obtain the concurrence of the state on industry regulation decisions to be made by the Interior Supervisor. Esther Wunnicke had previously announced that Watt had agreed to state concurrence. "We could hardly expect the man to do more," she said. But the new stipulations stated that concurrence extended only as far as exploratory drilling in broken ice and the disposal of oil-contaminated water. Omitted was state power of concurrence on undersea pipeline and offshore loading regulations and the critical issue of federal acceptance of industry oil-spill contingency plans.

Sheffield now admitted that Watt had broken their agreement, and bowing to Native demands, stated that more specific language related to oil-spill cleanup responsibilities should be written into a new notice of sale for Norton Sound.

The Conflict of Interest Investigation

In the legislature, conflict over the governor's plan to consolidate the budget under his office was getting white-hot. Traditionally, the funding for state capital-improvement expenditures was divided equally between the governor's office, the Senate and the House. Calling this scheme "pork-barrelling," Sheffield had planned to cut state spending by taking charge of it all. The legislators defended the three-way cut claiming that they were more knowledgeable about the needs of their constituents than was the governor's office or its consultants.

Things came to a head on Monday, February 21, when the governor distributed his budget to some 11 members of the legislature. Sure enough, the governor had made distributions to all areas of the state and had appropriated all $216 million of the bid-ready capital improvement projects. Senator Frank Ferguson (D-Kotzebue) took particular exception to the new budget. $1.3 million that was targetted to bring five schools in his district was diverted for the resurfacing of an airstrip in Unalakleet, which Ferguson said had been scheduled for relocating anyway.

On Thursday, Ferguson emerged from a heated discussion with Sheffield about these expenditures to address the Senate from the floor demanding a probe of the fund-raising trip, saying it was partly for personal gain and smacked of conflict of interest. "Oil and gas companies and concerns attended and contributed heavily to the governor's campaign debt retirement fund," he said. "The impropriety of this trip is appalling. Here we have the governor of the State of Alaska, elected to uphold the interest of the people who elected him, using his office for personal gain.

"The people in my district were opposed to the oil and gas lease sales. . . . The governor makes a deal with Watt even before he meets with him in Washington. The deal . . . was detrimental to local concerns and advantageous to the oil and gas companies."

Ferguson added that the presence of the attorney general and natural resources commissioners was also inappropriate on such a trip. Also, the state was involved in litigation with some of the petroleum companies with whom the governor and his commissioners had met. House Judiciary Committee Chairman Charlie Bussell (R-Anchorage) later supported Ferguson's request for the investigation.

Interior Secretary James Watt: keeping OCS sales on schedule.

Sheffield immediately denied the allegations of impropriety and added, "Any attempt to tie the trip to our pending negotiations . . . in the Norton Sound area also carries no substance." He accused Ferguson of raising the issue "to deflect public attention from my efforts to bring some common sense to the funding of capital projects in Alaska."

Ferguson was called into a private meeting with Sheffield the following day in which he was promised that an independent probe of the trip would be made. He was also told to refrain from further publicity about the matter. Ferguson broke his silence on March 7 when the governor announced in a press conference that it was up to Chief Prosecutor Dan Hickey to conduct the probe, Fuming, Ferguson said, "Our agreement was very clear. The governor said he would see that a special prosecutor is named, not that it would be up to Hickey."

At that same press conference, Sheffield relented having attended the fundraisers so soon after the meeting with Watt, and he conceded that his trip had the appearance of conflict-of-interest. "The timing left me open to criticism that I made a dark deal," he said.

Senator Ferguson is rarely given to such outbursts and is recognized in the legislature as a highly-effective, powerful, and instinctive worker with special qualities as a mediator. He later admitted he simply got angry after weeks of frustration. Characterized by a fellow senator as a man who represents "a vast hinterland in an urban-oriented legislature," Ferguson has to work twice as hard to secure a proportionate share of state wealth for his constituency.

As a result of Ferguson's action, Prosecutor Dan Hickey began the investigation of the controversial fund-raising trip and the legislature has broken the back of Sheffield's budgetary revisions. "I have something they don't have," Ferguson remarked to the press, "and that's an understanding of the political process." Prosecutor Hickey later issued a statement that initial inquiries turned up no wrong-doing on the governor's part, but suggested that the state ombudsman also look into the affair.

Gambell and Stebbins Sue

On Friday, March 4, eleven days before the sale, with briefs prepared by Alaska Legal Services, the villages of Stebbins and Gambell joined in seeking

Continued next page

[illegible]—Anchorage Daily News

Alaska Attorney General Norman Gorsuch: bad luck in the oil country.

Charles Hanson of Alakanuk salmon fishing on the Yukon.

Bill Hess—Tundra Times

Anna Komkoff of Kotlik tells of the feelings of her village about the Norton Sound sale at the January meeting in Nome of 73 villages calling upon Watt to delay the sale at least 5 years.

ı preliminary injunction against James Vatt to postpone the sale. The suit llleged that the federal government iolated the terms of the ANILCA and ailed to protect or consider subsistnce rights under the Act or under the ederal government's trust responsibiliy for Alaska Natives.

According to the papers filed in Nome, "The Bureau of Land Management predicts about three major oil spills during development. At least one of those spills will be catastrophic. In all likelihood, the dangers posed by oil exploration are far larger than this suggests, for Norton Sound is one of the most hostile areas in the world for oil development."

U.S. District Court Judge James Fitzgerald heard oral arguments on the case in Anchorage the following Friday, March 11. At that hearing, attorneys for Interior argued that OCS lands are not subject to requirements of the lands act because OCS lands are not a part of Alaska but a part of the federally-controlled shelf areas.

But Legal Services lawyer argued that if the lands act did not apply to OCS land off Alaska, neither did the Alaska Native Claims Settlement Act (ANCSA), which would make the Natives free to claim aboriginal rights in the Norton Sound area. (In 1982, Judge Fitzgerald denied offshore aboriginal rights in a suit brought by the Inupiat Community of the Arctic Slope, stating that such offshore areas come under federal jurisdiction.)

The Memorandum of Understanding

Meanwhile, Governor Sheffield was pressing Watt for further concessions on the sale. Working hard on a new compromise between the two governments was Sheffield's Washington liaison John Katz, former state commissioner of DNR under Hammond with a reputation as an effective mediator.

At a press conference on Monday, March 7, Sheffield revealed that he had been "a little upset" when he found out that the sale stipulations did not include the promised concurrence powers for the state. On Wednesday, following another phone conversation with Watt, Sheffield directed the Department of Law to prepare a suit. Attorney General Gorsuch stated that the suit would probably be filed against federal violations of the Coastal Management Act.

Avoiding a last minute suit by the state, Watt on Thursday, March 10, signed a legally binding memorandum of understanding. The new Norton Sound agreement makes these concessions:

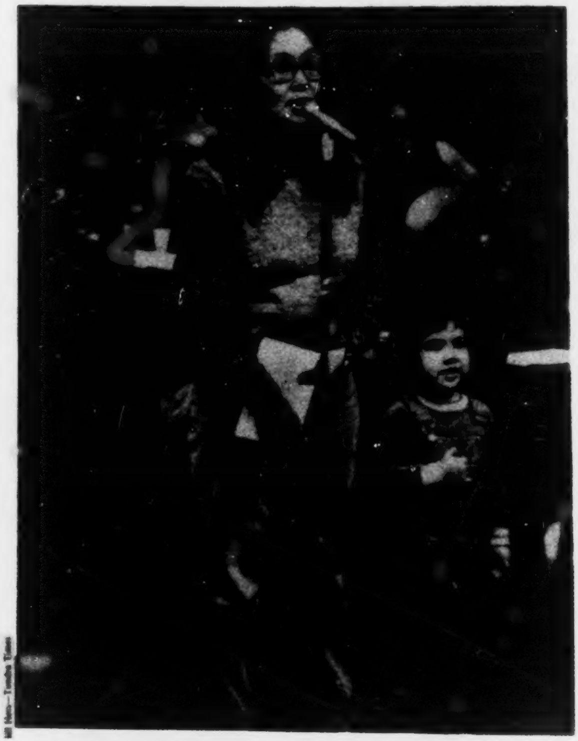
1. Federal and state will jointly review industry demonstration of industry oil-spill cleanup capability before the decision is made to allow drilling and other downhole activities below the threshold level.
2. State concurrence is required on decisions regarding the mode of transportation of crude oil from offshore bases to land, in consistency with the state coastal management program.
3. State concurrence is required in plans for disposal of oil-contaminated waters.
4. State review of oil spill contingency

"We know of no technology that can stop tidal action when the tides overflow the river delta. Storm surges accompany these tides and technology is not yet available to clean up in rough waters."

—Robert Okitkun, Kotlik.

"Back in 1957 or '58, two barges got stuck near the mouth of the Yukon (near Kotlik). Somehow, during the night, one of those barges caught fire. Both barges were carrying many barrels of oil. . . . From the barges the oil drained into the river. The river was full of oil. The oil leaked out and started to spread. And there was that oil spreading and tides coming in and out. Most of that oil remained on the soils and the tundra. From that time there haven't hardly been any birds there that we could see because of the oil. And there is hardly any more vegetation there either."

—Andrew Teeluk, Kotlik.



Bill Hess—Tundra Times

A young mother from Unalakleet testifies at the villagers' meeting in Nome as her daughter mimics her words: "If I do my part as a mother, and I make sure that my daughter learns to cut fish, is the oil industry going to do its part to see that she has fish to cut and seal oil to make?"

plans prior to approval of exploration or production plans. The state is also given the right to require an industry oil spill cleanup response cooperative.

5. At least three non-voting representatives from the state and local communities will be allowed to participate in the activities of the Bering Sea Biological Task Force.

The governor said the agreement satisfied all the state concerns that he thought were settled at the original January 25 meeting. On receiving news of the memorandum, national environmental groups called off their plans to challenge the suit in court. "The state got 90% of the stipulations we requested," said David Benton of Friends of the Earth. "The problem is that the memorandum of understanding is not legally binding on the oil companies as it would have been had the stipulations been included in the notice of sale. It is an unenforceable understanding between two governments."

While pleased with the Norton Sound agreement, Sheffield was disappointed in the publication the same day of the notice of sale for the St. George Basin in which 2.7 million more acres of the Bering Sea are scheduled to be auctioned on April 12. "The conditions we requested for the St. George Basin were submitted to the Interior Department on Feb. 1, but it appears that the Department did not include them in its notice of sale," the governor said in a prepared statement. "We will pursue this issue more closely in the days ahead." The conditions Sheffield sought for the St. George Basin sale were identical to those sought for Norton Sound.

Continued next page

Shirly Thorton of Nome ice fishing in Norton Sound.

AVCP Villages File Second Suit

On Monday, the day before the sale, Judge Fitzgerald denied the preliminary injunction requested by the two villages, who gave immediate notice of appeal to the 9th District Court of Appeals in San Francisco where they asked for an emergency injunction against the sale. Judge Fitzgerald declared that the sale itself would not cause irreparable harm, but the merits of the claims made by the two villages should be decided before the leases are awarded. Later, on April 4, the same court denied the request for summary judgment and dismissed the case the following day.

The afternoon of March 14, a second suit was filed by the AVCP and the tribal governments of 56 Native villages against the sale. The unanimous decision to sue was made at a meeting in Bethel held March 10 and 11. The brief for the second suit claimed that the sale would violate the Indian Self-Determination Act, the American Indian Religious Freedom Act, the Indian Child Welfare Act, federal common law, the first, fifth, and ninth amendments to the U.S. Constitution, in addition to the federal trust responsibilities for Alaska Natives.

The second suit, like the first, revolves around the central issue of subsistence. "The proposed lease sale," it states, "is the biological supermarket and spiritual cathedral of the Yupik people of Alaska. From time immemorial, the Yupik Eskimos have based their way of life on their ability to fish, hunt, and gather food in and around Norton Sound. . Oil or gas contamination of the Basin will have major adverse off- and on-shore consequences for fish, wildlife, and fauna that flourish in and around the Basin."

The following day, one hour before the bids were to be opened at the Sheraton Anchorage, AVCP President Ivan Martin held a press conference at the same hotel. Speaking for the 56 villages in the suit, Martin stated the Native people were "calling on Alaska and the nation to protect our way of life." He said the Native people were "not trying to stop all oil development," but that Natives should be involved in those decisions about exploration and production.

"We feel the industry does not have the technology at this time. The oil is not going to run away," he said. Aside from court action, Ivan indicated that the Native groups would also pursue other plans to gain government acceptance of their views. On April 21, the Bering Straits Native Association announced that it was joining AVCP in the suit.

On April 15, the 9th U.S. Circuit Court of Appeals in San Francisco, in response to the Stebbins-Gambell appeal, blocked the awarding of the leases in the Norton Sound Sale. The court said the government cannot award the leases until the court decides on the emergency motion for a permanent injunction. Oral arguments were heard in San Francisco on April 26, and the decision is pending.

The St. George Basin Sale

On March 23, the governor's press secretary Pete Spivey said the administration was gearing up for another battle over the St. George Basin sale in the Bering Sea. The state may demand the same veto authority over oil-spill contingency plans and offshore loading of oil produced in the area, he said. Also the governor wanted state and local representatives on the federal government's biological task force, a board that advises federal authorities on technical aspects of exploration and development operations.

Spivey said that officials of the **departments** of Law and Natural **Resources** were conferring with John **Katz and** his staff in Washington about **which** course the state is to take this **time**. Finally, on March 30, 1983, another memorandum of understanding was reached in discussions between Katz and Bill Horn, Interior deputy undersecretary. The agreement allows the state the same rights of concurrence and consultation that were provided in the Norton Sound agreement.

Suit Against St. George Sale Filed, Withdrawn

The latest agreement did not go far enough for several state and national environmental groups. Eric Smith, a spokesperson for Trustees for Alaska, said the federal government's analysis of possible oil spills and the impacts on species in the area was inadequate "We feel that the sale still presents severe dangers to fisheries, marine birds and mammals, and endangered whales," he said. A few days later, a suit was filed against the St. George Basin sale in the Anchorage federal court by the Aleutian villages of False Pass and Nelson Lagoon along with several local, state, and national environmental groups including the Audubon Society and Friends of the Earth.

The suit claimed that the sale offered inadequate protection guarantees for the wildlife and fish resources. Bristol Bay was said to be the world's largest red salmon fishery, creating $2.6 billion of sea harvest revenues annually.

On April 7, Sheffield sent a letter requested by Watt stating that federal plans for the sale were consistent with the state's coastal management plan, which weakened the argument of the suit. The next day, after a three-hour meeting with U.S. District Judge James Fitzgerald, the plaintiffs withdrew their suit. In return, federal attorneys promised the judge that Interior will not issue any leases in the sale until after May 12.

On the day of the sale, April 12, petroleum company officials bid $427 million on the St. George tracts, with Gulf Oil winning the most—39 tracts for $185 million. Government and company officials expressed pleasure with the sale, in spite of the fact that only 97 of the 497 tracts were bid on. Although some 1.1 billion barrels of oil and 3.6 trillion cubic feet of gas are estimated to lie under the 300- to 500-foot-deep waters 60 to 180 miles offshore, the amount spent on the sale was but a fraction of the $2.1 billion Diapir Field Sale held last fall. All parties recognized that it was a high-risk area, even for a high-risk industry.

As one oil executive admitted, the accelerated pace of the OCS leasing program is taxing oil companies to keep pace with the research they are required to support. This might lead to even more conservative bidding in future sales, which would not be good news for the federal government. ■

Inuit Circumpolar Conference

ICC Protests Arctic Military Build-up

News reports about a multi-million-dollar plan to expand the Air Force base in Northern Greenland has prompted Hans-Pavia Rosing, President of Inuit Circumpolar Conference (ICC) to demand "full insight into the activities of the American bases" in the entire Arctic region.

"This is not the first time that we have been taken by surprise in relation to the American Military presence in Greenland," Mr. Rosing said April 20 in a statement issued by his organization's head office in Nuuk, Greenland.

"We can no longer simply dismiss the problem only because defense matters according to the Rule Agreement are under the jurisdiction of the Danish government.

"We must demand full insight into the activities at the American bases, in Greenland as well as elsewhere in the Arctic.

"The Inuit Circumpolar Conference looks with grave concern at the efforts to make the Arctic region a theatre of war in the event of a major confrontation between the super-powers, let me use this occasion to encourage Inuit in Greenland, Canada and Alaska to debate publicly the use of the Arctic for military purposes.

"Information about the American military presence must be made available to the people who will be the first to feel the effects of war."

At the very first meeting of the ICC in 1977, a resolution was passed demanding that "the arctic shall be used for peaceful and environmentally safe purposes only, and that there shall be prohibited any measure of a military nature such as the establishment of military bases and fortifications, the carrying out of military maneuvers, and the testing of any type of weapon." ■

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The Sodhouse Story

by Johnny Adams, NSB Energy Planner

"Its origin is virtually unknown," says Ernest Kignak, a Barrow Elder, who once lived in this sodhouse when he was a young boy. While inquiring about the sodhouse, I took my draft copy of the sodhouse which I drew several weeks ago from his description. I saw his eyes twinkle and his mind flashing back to his experience in the sodhouse as he lifted his head towards the ceiling.

"This particular sodhouse you drew is the one I dwelled in when I was a very young boy," he added. This sodhouse before construction is leveled by removing the top layer of tundra sod in a selected area. The floor decking in 12 by 14 feet of driftwood 8 to 10 inches in diameter is placed carefully leveled on the ground. The floor is rectangular properly oriented to the prevailing winds. Skylights catch the movement of the sun.

The ridge poles in the corner are first erected. A pair of equal length are shorter than the other pair. The shorter pair are placed at the south corners which are approximately 4½ to 5 feet in length. The longer pair are 5½ to 6 feet long and are placed on the north corners. Then the midridge poles which are approximately 7 feet in length are placed approximately 2/3 of the width southward to catch the sun's orbit for the skylight.

All material of driftwood or whale bone inside the floor, ceiling and walls is then dressed to smoothness to fit perfectly. The uprights are cut diagonal to the ridge poles in the mid-section. The roofing of driftwood is vertically placed from the mid-ridge beam and is fit to perfection after dressing it smoothly. Then the apertures for skylight and vent are carefully constructed. The shorter pieces of intended length of driftwood for the skylight are then placed horizontally in the middle of south wall. The approximate size is about 2 by 3 feet for the skylight, sometimes bigger or smaller.

The skylight is made of bearded seal or walrus corti, membranes from the animal's stomach which are sewn together forming a dome-shaped bubble. It is not transparent, but provided much light during the day of sunshine. It is designed to be in the reach of the women who sometimes repair or dampen the skylight.

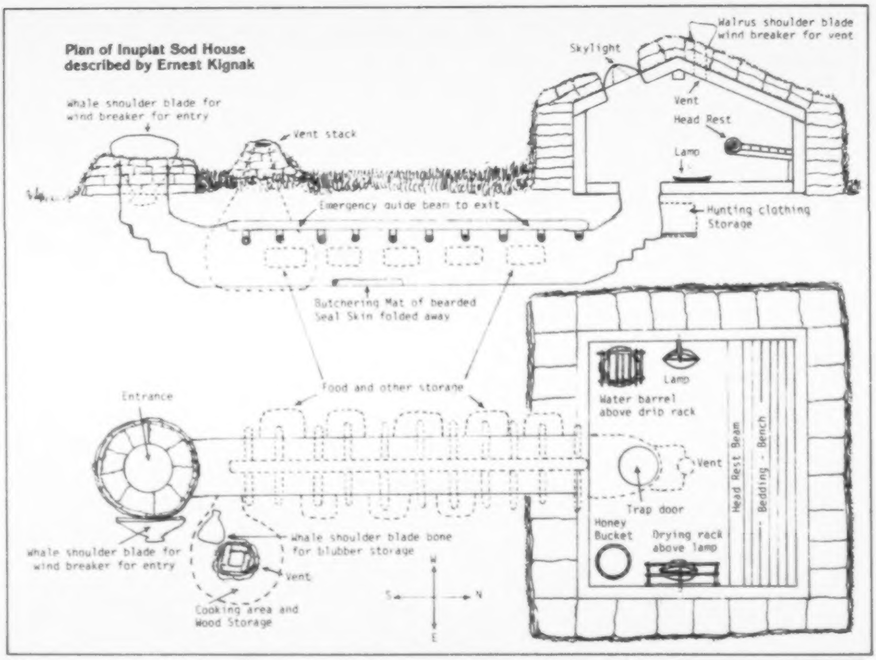
Whether the storm chamber or tunnel is dug first, Ernest Kignak didn't know. He believes before putting the dry sod around the iglu they must have dug the 6-foot-wide passage approximately 20 to 25 feet long about 5 feet in the ground, running north and south from both entry openings. The small pieces of driftwood or whale bone supports are placed forming a cathedral arch in the storm chamber. Sometimes an emergency guide beam is installed in the middle of the tunnel. This is used by putting your hand on the beam with your head low and actually running in the case of an emergency or when game such as a polar bear is sighted close by.

The dry sod is then placed all around the structure of the walls. When putting sod on the roof, the dryest side is placed on the roof deck or upside down, then the second layer is placed right side up. This dry sod hardly grows vegetation but provides good insulation. The tunnel is also covered with sod after digging for the main entrance which is also surrounded with sod approximately 3 feet high. They also dug the entry for the iglu from underneath and cut a convenient opening on the floor.

The two lamps are placed opposite of each side to provide light and heating. All you see inside the iglu is the two lamps with sharp pointed sticks just above that drips oil from a piece of blubber into the lamp, a honey bucket on the left and a hanging drip rack for water barrel where you just place a piece of snow or ice which then melts gradually to the water barrel. A hang dry rack is on the left lamp, about four feet above it. It is usually not lit unless to dry mukluks or clothing. The lamps are made of soapstone traded from the Canadian Eskimos where it seems plentiful. The bed rolls of caribou are stored in the tunnel as soon as you get up.

These wooden vessels for water barrel and honey bucket are made of driftwood shaped like shingle strips which are woven tightly with baleen, an old technique that Ernest Kignak can't describe. The shingle shaped thin pieces Ernest Kignak states were probably glued with sap from trees that were traded from southern travelers and most often used for boat building purposes when available. Consequently, it was just as good as a European wooden barrel. Ernest Kignak remembers that it was woven in three different levels, bottom, mid-section and near the top with baleen. ■

Ernest Kignak, Barrow Elder



Plan of Inupiat Sod House described by Ernest Kignak

Whale shoulder blade for wind breaker for entry
Vent stack
Skylight
Walrus shoulder blade wind breaker for vent
Vent
Head Rest
Lamp
Emergency guide beam to exit
Hunting clothing Storage
Butchering Mat of bearded Seal Skin folded away
Food and other storage
Entrance
Lamp
Water barrel above drip rack
Vent
Trap door
Head Rest Beam
Bedding - Bench
Honey Bucket
Drying rack above lamp
Whale shoulder blade bone for blubber storage
Whale shoulder blade for wind breaker for entry
Vent
Cooking area and Wood Storage
W
S
N
E

National Arctic Research and Policy Act

Brower, Adams ask Murkowski to delay S.373 until after July ICC Meeting in Frobisher Bay

Arctic Research and Policy Bill Fails to Provide for Adequate Inuit-Community Consultation

On April 8, 1983 NSB Mayor Eugene Brower asked Alaska's U.S. Senator Frank Murkowski to delay further action on S.373, the Arctic Research and Policy bill, until after the third general assembly of the Inuit Circumpolar Conference in Frobisher Bay, NWT, in July 1983. At the same time, Brower asked State Representative Al Adams (D-Kotzebue) to join him in this request. Adams, who represents the North Slope Borough, is one of three Inuit lawmakers serving in Alaska's legislature, and one of Alaska's most influential political leaders. Adams has chaired Alaska's powerful House Finance Committee since 1981. On April 18th, Adams wrote to Murkowski:

"As you may recall, the North Slope Borough Mayor Eben Hopson first introduced the need for Arctic policy development in his 1976 Congressional campaign. He openly dedicated his entire campaign to the single issue of our national and international need for a coherent Arctic policy. Mayor Hopson recognized the formation of this policy to be an important national mission in which the Inuit would play a key and central role. He regarded the Inuit to be essential for the success of any national or international Arctic policy, and led the organization of the Inuit Circumpolar Conference (ICC) in 1977.

"The national Arctic policy Mayor Hopson envisioned was one to manage America's great Arctic. He knew Inuit leadership and stewardship would be required. In 1977, Inuit leaders and elders from Greenland, Canada and

Continued next page

throughout Alaska met in Barrow in quest of developing an Arctic policy....

“In July, ICC delegations from Alaska, Canada and Greenland will meet in Frobisher Bay, NWT, to develop the ICC's Arctic-policy statement and recommendations. Those documents will incorporate all of the Arctic-policy objectives shared by our entire Inuit community. At this point, however, our desires and extensive preparations to actively participate in the development of an Arctic policy are not provided for in the scope of S.373 as it lacks provisions for direct Inuit participation....

“It has been suggested that the degree of Inuit participation we seek may be politically unacceptable to your congressional colleagues. I do not believe a strong case has been yet presented in the Senate defining this participation. I believe such a case can be made following the ICC convention this summer in Canada, and I am requesting you to seek to delay action on S.373 until after the convention. I am confident this delay will result in greater political support for serious Arctic-policy legislation. To further assist in gaining this support, it may be a wise decision to include this Arctic-policy initiative to be part of your work in the Senate Foreign Relations Committee.”

Representative Al Adams: Inuit belong in Arctic Policy development.

Murkowski's Initiative: a National Arctic Policy

Frank Murkowski, Republican, was elected to the U.S. Senate in 1980 to replace U.S. Senator Mike Gravel, a Democrat. 1980 was the year the Republican party regained control of the U.S. Senate for the first time in 30 years, and Murkowski immediately fell in behind Alaska's senior U.S. Senator Ted Stevens, who became whip of the Senate.

Murkowski's Arctic Research and Policy Act is his first major legislative initiative, and is co-sponsored by Ted Stevens. NSB officials were encouraged by this initiative, and assigned NSB's Washington, D.C., Liaison officer Kris Patterson to monitor it.

Murkowski was also encouraged and advised by David Hickok and Larry Dineen. David Hickok is the long-time director of the University of Alaska's Arctic Environmental Information and Data Center (AEIDC) and a long-time advocate of national Arctic-policy development. Larry Dineen was Executive Vice-President of the Arctic Slope Regional Corporation until March 1983 and a personal friend of Senator Murkowski, with whom Dineen served in state government under the Hickel-Miller administrations. Murkowski left government to become president of a Fairbanks bank, and Dineen became Executive VP of ASRC, where he became an advocate of Arctic-policy development.

Murkowski's first version of the Arctic Research and Policy Act, S. 1562, failed to win industry support. His next version, introduced as Amendment #1452, managed to win oil industrial support for his Arctic-policy initiative but only after removing any trace of Inuit-community consultation at the insistence of the oil lobby led by British Petroleum's SOHIO Oil Corporation.

Amendment #1452 drew strong opposition from the North Slope residents, and another version, Amendment #3271, was introduced. After opposing the earlier amendment, Brower agreed to withdraw his opposition and took a wait-and-see position. With hard negotiations on the part of the NSB Washington staff, Brower was able to gain the single concession which stipulated that two members of the nine-member Arctic Research Commission established by the bill would be “Arctic residents,” which was included in an amended amendment, #3658. Amendment #3658 passed the Senate too late to pass through the House before the 96th session of Congress adjourned last year. The measure was re-introduced this year as S.373, received approval of the Senate Governmental Affairs Committee on March 17, 1983, and was sent to the Senate floor.

Brower and other Alaskan Inuit leaders want to prevent the irony of having America's first Arctic-policy measure fail to provide for the most important Arctic-policy element: consultation with the Inuit, the indigenous people of the American Arctic. The Inuit Circumpolar Conference meeting in Frobisher Bay will discuss the question of adequate Inuit-community consultation on Arctic policy, and will make recommendations for incorporation in S.373, and in future Arctic-policy measures.

Earlier this year, Senator Murkowski was appointed to the Senate Committee on Foreign Affairs, an unusual appointment for a freshman Senator. NSB officials hope his new position will enable him to include the Inuit community in his noteworthy attempt to formulate for the first time the nation's policy for the Arctic. ■

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Mr. MacKay. Thank you, that was very helpful.

Mr. Hans-Pavia Rosing.

Mr. Rosing. Mr. Chairman, and members of the committee, my name is Hans-Pavia Rosing and I am the president of the Inuit Circumpolar Conference, an organization of Inuit Eskimos in Alaska, Canada, and Greenland. I am also a member of Greenland's Home Rule Parliament and a member of the Commission on Scientific Research in Greenland. Thank you for the opportunity to testify today on the Arctic Research and Policy Act of 1983.

The preservation of Inuit culture and heritage is a primary objective of the Inuit Circumpolar Conference. Being intimately dependent on wildlife and environment for our survival as a people, we have a very special interest in arctic research and policy. For a nation to stumble into its arctic regions—into areas fragile in their environment—without appropriate technology derived through adequate research, will endanger the subsistence lifestyle and the culture of the native inhabitants of the Arctic who will still be there long after the oil rigs are removed and the mine shafts closed. Consequently, it is in the strong interest of my organization and the 90,000 Inuit which it represents to make sure that development of the Arctic takes place in a secure and orderly way, based on thorough research.

Next month in Frobisher Bay, Arctic Canada, the Inuit Circumpolar Conference will for the first time attempt to formulate an arctic policy combining and coordinating the policies of the arctic region with respect to areas such as resource exploitation, education, health, and scientific research. It is our aim to have this policy accepted by the various nations of the Arctic.

I will be happy if the relevant resolutions from that conference will be included in the record of this subcommittee.

Mr. MacKay. This record will specifically be held open for that purpose. We would be interested in that.

Mr. Rosing. Thank you very much, Mr. Chairman.

[The information appears at the end of Mr. Rosing's testimony.]

Mr. Rosing. A large part of arctic research problems involve the ocean and the atmosphere which conform to no national boundaries, therefore, there is a need for cooperation among the Arctic nations. A policy for arctic research and environmental safeguards developed by the United States alone will in many instances be of little or no value if your neighboring countries are not following your lead. Oil spills, air pollution, and the underwater noise from icebreaking supertankers do not respect national boundaries. An initiative by the United States to contact other Arctic nations, such as Canada, Denmark, and Norway, with the purpose of coordinating arctic policy would be highly desirable.

So far, the nations of the Arctic have been successful in passing only one piece of genuinely circumpolar legislation, namely the Treaty on Protection of the Polar Bear. In contrast, the policies of the various signatories to the Antarctica Treaty have coordinated their activities by providing for cooperation and freedom of movement for scientific investigation, as well as for the exchange of observers and scientific data. Agreement has been reached in such areas as conservation and living resources, contamination of the environment, and development of telecommunications.

A national program should provide for strong circumpolar international cooperation in arctic science as well.

Given that we, the indigenous population of the Arctic, are the ones who feel the effects of arctic research, or lack thereof, it is only fair that we are recognized as participants and members of any decisionmaking bodies created by this legislation. We are deeply concerned about the effects of accelerating technological and developmental changes on our lives and their impact on our culture, health, and well being. The result of this policy should be to reduce to a minimum the adverse impact on our land, water, wildlife, and people who will still be in the Arctic when the nonrenewable resources are gone.

Inuit participation in the development of an arctic research policy would be beneficial to all parties. We have developed over the centuries a unique understanding of the environment. To not insure Inuit participation is simply an exclusion of valuable information and serves to disenfranchise the indigenous people of the Arctic.

A crucial factor in Inuit consultation and participation is access to adequate and timely information and documentation. Numerous research projects have been carried out in the Arctic throughout the ages. In our opinion, the Inuit have been left in the dark while ample information and arguments have been provided to the majority societies. Future cooperation should be to the advantage of the Inuit as well.

Finally, Mr. Chairman, for your information, the U.N., as Mayor Brower mentioned, has admitted the Inuit Circumpolar Conference as a nongovernmental organization, recognizing the commitment of the Inuit to arctic environmental protection in cooperation and recognizing the value of Inuit traditional knowledge and culture. As arctic residents, we specifically request the same recognition of our commitment and value from the subcommittee.

Thank you very much for inviting me to speak on behalf of the Inuit Circumpolar Conference. I will be happy to respond to any questions.

[The working documents of the Inuit Circumpolar Conference follow:]

INUIT CIRCUMPOLAR CONFERENCE
GREENLAND
CANADA
ALASKA

ICC-Alaska Regional Office
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September 13, 1983

Congressman Doug Walgren, Chairman
House Sub-Committee on Science, Research
and Technology of the House Science
and Technology Committee
2441 Rayburn HOB
Washington, D.C. 20006

Dear Congressman Walgren:

By way of introduction my name is Dalee Sambo, Special Assistant to Hans-Pavia Rosing, President of the Inuit Circumpolar Conference (ICC). I manage the Alaska Regional Office and other ICC activities in Alaska.

We very much appreciate that the Record of Hearings of June 28, 1983, regarding H.R. 2292 before the House Sub-Committee on Science, Research and Technology of the House Committee on Science and Technology has been left open to allow the ICC to enter their resolutions and Circumpolar Arctic Policy working documents in that record. We feel this participation by the Arctic peoples is necessary and essential to the development of any national Arctic policy.

The ICC was first organized in 1977 at Barrow, Alaska and the second conference was held at Nuuk, Greenland in 1980. The purpose of the organization is to preserve, protect and promote the culture, rights and environment of the Inuit race, as a whole, throughout our member countries: Alaska, Canada and Greenland.

The organization is based on the fact that we, Inuit, are a common people, with a common root, culture and also a common environment. We have occupied the Arctic for thousands of years due to the unique ability to adapt to and live in this environment. Furthermore, we are the only Non-Governmental Organization (NGO) with United Nations status that represents the Arctic peoples on an international level.

The ICC recently concluded its Third General Assembly, which was held in Frobisher Bay, NWT, Canada from July 25-31, 1983. The focus of this third assembly was the development of an Arctic Policy.

Enclosed please find copies of the ICC 1977; 1980 and 1983 General Assembly resolutions; ICC Charter and By-Laws (as amended at the 1983 General Assembly); and ICC working documents on Arctic Policy for inclusion in the record of the House Sub-Committee on Science, Research and Technology of the House Committee on Science and Technology.

All of the resolutions reflect the major concerns of the ICC, however, the principle resolutions and working documents are those of the 1983 assembly, which specifically address Arctic Policy and our current concerns. As noted on the index there are seven (7) resolutions which are to be incorporated to reflect the overall ICC Circumpolar Arctic Policy working documents. They are resolutions numbers 83-17 regarding science and research in the circumpolar regions; 83-18 addressing the Inuit philosophy of education; 83-20 addressing Inuit health and welfare; 83-21 addressing the circumpolar environment policy; 83-25 regarding Inuit economic development; 83-29 addressing Arctic communications; and finally 83-30 the resolution stating the ICC Circumpolar Arctic Policy.

Resolution 83-17 (science and research) directly relates to H.R. 2292 and is a key component of the Circumpolar Arctic Policy. Each of the seven (7) resolutions or working documents which make up our Circumpolar Arctic Policy should be given serious attention by the U.S. House prior to the adoption of the Arctic Research and Policy Act. However, serious and thoughtful attention should also be given to Resolutions 83-01 stating the ICC position on nuclear activity in the Arctic and Sub-Arctic areas; 83-07 relating to protection of the Norton Sound, Bering Sea and Alaska environment; and 83-22 regarding oil spills response standards and technology in the circumpolar region. Each of these resolutions represent other important concerns of our organization.

Again, we appreciate the placement of the enclosed documents in the official formal Record of Hearings.

If you have any questions, comments or concerns with regard to this letter or the enclosed documents please don't hesitate to contact the ICC office in Anchorage, Alaska. As well, if there is a need throughout your proceedings on the national Arctic Policy to call on the ICC, our representatives will be glad to assist you and your colleagues.

We look forward to the positive outcome of the U.S. Arctic Research and Policy Act and our participation in this landmark Act.

Thank you.

Best regards,

Dalee G. Sambo

Dalee Sambo, Special Assistant
ICC-Alaska Regional Office

DS/lw

Enclosures

cc: Hans-Pavia Rosing, ICC President
James F. Stotts, ICC Executive Council Member-Alaska
Oscar Kawagley, ICC Executive Council Member-Alaska
files

INUIT CIRCUMPOLAR CONFERENCE

1983 GENERAL ASSEMBLY RESOLUTIONS

83-01 - ICC Position on Nuclear Activity in the Arctic and Sub-arctic areas.

83-02 - Resolution calling for Equal Representation of Women within the ICC.

83-03 - Resolution calling for Soviet Inuit Participation within the ICC.

83-04 - Resolution calling for support of the Aleut People of Alaska with respect to the World War II Commission created by the Carter Administration.

83-05 - Resolution calling for ICC Support of the Canadian Constitutional Work within the Canadian Government.

83-06 - Resolution addressing Canadian Inuit Art.

83-07 - Resolution relating to protection of the Norton Sound, Bering Sea and Alaska Environment.

83-08 - Resolution calling upon the ICC to support Plaintiffs in the law suit ICAS and UIC et al. vs. U.S. et al.

83-09 - Resolution creating a permanent Inuit Circumpolar Conference Elders Organization.

83-10 - Resolution to associate the ICC with the World Council of Indigenous Peoples.

83-11 - Resolution addressing the World Council of Churches policy statement on "Land Rights for Indigenous Peoples".

83-12 - Resolution calling for the protection of the North Slope of the Yukon.

83-13 - Resolution addressing the ICC Consultative Status to the United Nations.

83-14 - Resolution addressing the Proposed Canada-Denmark Convention on Marine Environment Cooperation.

83-15 - Resolution on Migratory Birds.

83-16 - Resolution addressing a Uniform Writing System.

*83-17 - **Resolution regarding Science and Research in the Circumpolar Regions**.

*83-18 - **Resolution addressing Inuit Philosophy of Education.**

83-19 - Resolution addressing the Inalienable Nature of Inuit Subsistence Rights.

*83-20 - **Resolution addressing Inuit Health and Welfare.**

*83-21 - **Resolution addressing the Circumpolar Environment Policy.**

83-22 - Resolution regarding Oil Spills Response Standards and Technology in the Circumpolar Region.

83-23 - Resolution regarding Alternative Energy Systems for Inuit Communities.

83-24 - Resolution addressing the Contract Schools Managed by Tribal Governments in the AVCP-Calista Region in Alaska.

*83-25 - **Resolution of the Economic Relations Working Group calling upon the Governments of the U.S., Canada and Denmark to Support Inuit Economic Development.**

83-26 - Resolution regarding Inuit Employment Problems in the Circumpolar Regions.

83-27 - Resolution regarding the Wildlife Agreement in principle of Inuit of Nunavut.

83-28 - Resolution calling upon the Congress of the U.S. to insure Inuit Participation in the Formulation of American Arctic Science and Research Policy.

*83-29 - **Resolution of the Communications Commission of the ICC.**

*83-30 - **Resolution Stating the Inuit Circumpolar Conference Circumpolar Arctic Policy.**

NOTE: those resolutions underscored and shown with asterisks are the resolutions developed by the working groups of the Third General Assembly. Resolution 83-30 is the ICC Circumpolar Arctic Policy -- each of these working documents are to be incorporated to state the overall Circumpolar Arctic Policy, which was adopted in principle.

DECLARATION ON INUIT RESEARCH AND SCIENCE

Inuit possess unique and specific Arctic scientific knowledge. Often, Arctic research projects fail to take advantage of this resource, thus diminishing the validity of Arctic research results. The Arctic is a single geographic area, yet Arctic science and research activities often occur on a national, regional or institutional basis, rather than in an internationally cooperative forum. Inuit have not been made party to results of Arctic research. Arctic science and research has in the past not been conducted with the end goal to address Inuit science and research priorities.

While the Inuit of Canada, Alaska and Greenland have in the past called upon their governments to respond to the lack of Inuit participation in Arctic science and research -- and to respond to the need for international Arctic rim research cooperation -- it has witnessed no such actions, except within the Inuit Circumpolar Conference.

The Inuit Circumpolar Conference, as the only international Arctic policy forum with Non-Governmental Organization status at the United Nations, is in a position to request that the United Nations Subcommittee on Indigenous Peoples of the Human Rights Commission -- or the United Nations agencies as deemed fit -- serve as a resource body for Arctic rim nations cooperation in science and research.

Arctic science and research should include the following parameters:

1. Arctic rim country cooperation with Inuit.
2. Focus on circumpolar research to benefit Inuit, in the realm social, economic, health, applied Arctic technology -- including local energy and alternative energy development.

3. Resource development from the perspective of adequate technology to ensure protection of the environment and from the perspective of adequate local participation in resource development planning.

4. Environmental protection of renewable resources of the Arctic to protect Inuit subsistence rights.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-17

RESOLUTION REGARDING SCIENCE AND RESEARCH IN THE CIRCUMPOLAR REGIONS.

WHEREAS, a review of research-oriented resolutions of previous ICC assemblies has shown that difficulty has been met in implementing these resolutions due to lack of a specific follow-up body within ICC; and

WHEREAS, relevant examples of regional control, monitor and reporting of scientific endeavours in the circumpolar region, is applied or being developed in Greenland and Alaska; and

WHEREAS, dissemination of information among Member Parties in past, current and future scientific and other research activities relevant to the Inuit is desired; and

WHEREAS, Inuit involvement is desired in policy making, design, approval and implementation of any research undertaken or to be undertaken in the circumpolar region, to prevent negative impact of Inuit interests; and

WHEREAS, Inuit should benefit from research in their homeland which includes the utilization of Inuit knowledge and experience; and

WHEREAS, Inuit must have access to public and private sector research material deemed relevant to the Inuit including renewable and non-renewable resource areas in a speedy and timely manner; and

WHEREAS, priority and action is urgent for Inuit research needs in areas including, but not limited to: health, environmental and social impacts of development, waste disposal, linguistics, prehistory, traditional and cultural patents, oil spill clean-up capabilities and proven structural capabilities of offshore drilling rigs; and

WHEREAS, Inuit involvement and control over new technological developments with adequate human and financial resources is needed, including the conduct of independent and innovative research among the Inuit; and

WHEREAS, the Inuit should have easy access and influence to relevant and appropriate decision makers;

THEREFORE BE IT RESOLVED THAT the Inuit Circumpolar Conference establish an International Scientific Commission, made up of representation from the appropriate special interest groups of ICC and involving all Inuit national entities. This Commission is to be answerable to the ICC Executive Council and to undertake coordination and specific actions without delay including, but not limited to, the following:

1. Operational funding to be drawn by negotiation from the United Nations and from the academic, government, industrial and private scientific sources.

2. To create an inventory of all the appropriate scientific organziations and science advisory bodies in the member nations, and establish liaison with them.

3. To seek to create -- using existing resources and modern computers and communications technology -- an on-going register of northern-oriented research, completed, in progress and formally submitted for funding.

4. To disseminate to all member bodies of ICC the information derived from the register.

5. To participate in national and international science advisory and deliberative bodies affecting or potentially affecting Inuit interests, to present ICC principles and research proposals to the scientific world.

6. To use all forums to seek opportunities to put Inuit environmental and cultural knowledge to use in collaboration with the appropriate endeavours of the scientific world, and to explain ICC opposition to certain scientifically-cloaked activities.

7. To provide thorough and sound scientific backing for ICC efforts to oppose certain (unwanted) southern initiatives, and suggest alternatives.

8. To conduct research independently, within the body of ICC.

9. To establish agreement with the national scientific

bodies on a set of ethical codes for the conduct of research in the north.

10. Setting forth for the scientific world the research priorities as perceived by the Inuit.

11. That in all its actions the Commission be guided by the principles set forth by the President of the ICC before the subcommittee on Science, Research and Technology on June 28th, 1983.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-18

RESOLUTION ADDRESSING INUIT PHILOSOPHY OF EDUCATION.

WHEREAS, the western culture is being transmitted in the educational systems in the north; and

WHEREAS, there is a need for the development and exchange of Inuit educational materials and ideas between the Inuit of the North as well as continuous open communication among those Inuit active in the educational field; and

WHEREAS, there is a need to integrate the traditional Inuit cultural values and the western cultural values within the educational system; and

WHEREAS, there is a need for more Inuit participation in developing and implementing educational delivery systems and policies; and

WHEREAS, our educational systems are to prepare our children for life based on values and skills from the Inuit culture and the western culture; and

WHEREAS, the elders have expressed concerns for the maintenance of our Inuit culture.

THEREFORE BE IT RESOLVED THAT the Inuit Circumpolar Conference sponsor an international Inuit educational conference prior to the General Assembly of 1986 to:

1. review Inuit educational philosophy;
2. exchange experiences, programs and materials;
3. visit with non-Inuit educators and administrators;
4. meet with elders who are particularly interested in the integration of Inuit and western educational systems;

BE IT FURTHER RESOLVED THAT the ICC Committee on Education, Language and Culture fully support the ICC Elders Conference Resolutions 83-E-03 and -04.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-20

RESOLUTION ADDRESSING INUIT HEALTH AND WELFARE.

WHEREAS, more Inuit professionals are needed in health and welfare services in the circumpolar region; and

WHEREAS, the health and welfare care of Elders is in great demand in Inuit communities; and

WHEREAS, alcohol and drug abuse are still the major health concerns of Inuit; and

WHEREAS, high teenage pregnancy is affecting the health and welfare of Inuit; and

WHEREAS, Inuit have a very high unemployment rate which affects the health and welfare of Inuit;

THEREFORE BE IT RESOLVED THAT the Inuit Circumpolar Conference take the necessary steps to ensure that:

1. governments, organizations and establishments where Inuit live encourage and make funds available for continuation of higher education for Inuit health and welfare professionals;

2. the governments where Inuit live ensure that institutions and establishments be built which would ensure that the Inuit Elders remain in their home areas; and, that Inuit be hired for the prupose of improving health and welfare care for the Elders and the handicapped;

3. that the Nation-States of the circumpolar region continue to fund present programs and perform research which must take into account Inuit perspectives of how to eliminate or decrease alcohol and drug abuse;

4. that the Nation-States of the circumpolar region take the necessary measures to provide adequate sex education to Inuit;

5. that Nation-States of the circumpolar region take the necessary steps to provide greater job and training opportunities to Inuit youth;

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-21

RESOLUTION ADDRESSING THE CIRCUMPOLAR ENVIRONMENT POLICY.

WHEREAS, the circumpolar region, its environment and its resources are of fundamental importance to Inuit and the global community; and

WHEREAS, the Inuit of the circumpolar region are the traditional and current users of the arctic and sub-arctic regions, including the land, the sea and the ice; and

WHEREAS, Inuit recognize their special responsibility to manage and protect the environment of the circumpolar region for the benefit of present and future generations; and

WHEREAS, the environment of the circumpolar region is presently being threatened and degraded by unplanned, premature or inappropriate development; and

WHEREAS, there is a need for a comprehensive circumpolar environment polciy that promotes long-term management and protection of arctic and sub-arctic wildlife, environment and biological productivity and which recognizes Inuit rights and interests in the circumpolar region;

THEREFORE BE IT RESOLVED THAT:

1. The Inuit Circumpolar Conference General Assembly accepts and adopts the following environmental principles for the circumpolar region, which principles are attached to the present resolution.

2. The Inuit Circumpolar Conference undertake the research preparation and strategy necessary to develop and implement a circumpolar environment policy with special attention to the marine environment consistent with the above environmental principles, the whole on an urgent basis and within one year of the present General Assembly.

3. The Inuit Circumpolar Conference take the necessary steps to assist in the establishment within the circumpolar region of a resource and training center for developing Inuit expertise that will promote Inuit interests in environmental protection and management and to develop further Inuit expertise

in Arctic environment issues and research.

CIRCUMPOLAR ENVIRONMENTAL PRINCIPLES

Inuit policies and actions towards a Circumpolar Environment policy would be based on certain principles including the following:

1. Integrity of the environment - Inuit recognize their responsibility for ensuring the integrity of the circumpolar environment and its resources as a source of life, livelihood and well-being for present and future generations.

2. Right to manage - Inuit have a right to protect, to manage, to benefit from and to retain access to the circumpolar environment and its resources, the whole based upon their historical and current use and occupancy of the circumpolar environment.

3. Participation in decision-making - Inuit must have full and meaningful participation in any decision-making processes affecting the complete environment of the circumpolar region, including the marine environment, coastal zones, ice zones, the offshore area, seabed, land environment and atmosphere.

4. Participation in design and implementation - Inuit must have full participation in the design and implementation of all management systems for renewable and non-renewable resources in the circumpolar region.

5. Impact assessment - There shall be no major development activity in the circumpolar region unless subject to adequate planning and environmental and social impact assessment procedures acceptable to Inuit. Such impact procedures must include, where appropriate, funding to the Inuit to encourage and ensure their participation in these procedures.

6. Access to information - Inuit shall have full and timely access to all necessary information concerning any plan or action affecting the circumpolar environment.

7. Research - Inuit recognize the need for relevant and appropriate research in the circumpolar region. Inuit must determine research needs and priorities and participate in the design and implementation of any research to be undertaken in the circumpolar region.

8. Renewable resource-use - Inuit use of renewable resources of the circumpolar region for traditional uses, nutritional needs and commercial trade must take priority over all other uses of such resources.

9. Inuit expertise - Inuit expertise on the circumpolar environment and its resources shall receive adequate and fair recognition as part of the scientific database available to all users and managers of the environment of the circumpolar region. Where appropriate this information will be integrated into management regulations affecting the control and use of the environment.

10. International cooperation - International cooperation is necessary for proper research, protection and management of the circumpolar environment. Inuit consultation and participation at all stages of such cooperation is fundamental.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, L983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-25

RESOLUTION ON THE ECONOMIC RELATIONS WORKING GROUP CALLING UPON THE GOVERNMENTS OF THE UNITED STATES, CANADA AND DENMARK TO SUPPORT INUIT ECONOMIC DEVELOPMENT.

PREAMBLE

For Inuit the measuring stick for economic development is how it affects our way of life and our survival as a people. Inuit control over the various aspects of economic development represents the independence of our people. The increased Inuit participation in economic development which is occuring at a rapid pace will continue in the future and result in even greater economic self-sufficiency. However, increased economic benefits also must result in the enhancement of the natural economy and the Inuit culture.

WHEREAS, the role of the harvesting activities of the Inuit are not broadly understood as part of a distinct economic system and it has not been regulated and supported as a legitimate economic undertaking; and

WHEREAS, the Inuit desire a direct East-West interaction across the Arctic homeland and persons of skill and experience in the areas of planning, management and training in specific economic undertakings exist in some Nation-States of the Inuit homeland while not in others and there are surpluses of goods and services desired by the Inuit in some of the Nation-States while scarcity exists in others; and

WHEREAS, there is a need throughout the Inuit homeland for financial and insurance institutions with an intimate knowledge of Inuit economic affairs; and

WHEREAS, there is a desparate need for Inuit at the regional local levels to control development which impacts upon Inuit and a need to participate in the development policies of respective Nation-States; and

WHEREAS, the adverse impacts upon the Inuit from non-renewable resource development will be substantial and long lasting; and

WHEREAS, there remains a pressing need for Inuit business and employment opportunities and training; and

WHEREAS, only the Inuit have engaged in discussion of and have embarked upon the development of an Arctic Policy;

THEREFORE BE IT RESOLVED THAT the delegates assembled at this Third Inuit Circumpolar Conference in Frobisher Bay call upon the governments of Canada, the United States and Denmark to cooperate with the Inuit Circumpolar Conference to:

1. Recognize the natural economy as an integral part of the general economy and to regulate and support these economic pursuits as a legitimate economic activity.

2. Promote the East-West interchange across the Arctic homeland and to facilitate the exchange of skilled and experienced persons and the elimination of barriers to trade, the Economic Relations Commission of the ICC will investigate the rights, responsibilities and legal requirements of this economic intercourse and report to the President and the Executive Council.

3. Pursue the development of an international full service financial and security institution for the Inuit homeland. In furtherance of this service, the Economic Relations Commission of the ICC will conduct a full inquiry and report to the President and the Executive Council.

4. Organize local or regional governments, local or regional tribal or ethnic municipal organizations or other forms of local or regional control by the Inuit. These local and regional entities will insure full opportunity for Inuit employment and Inuit business.

5. Facilitate the participation of the Inuit in the formulation of Arctic development policies.

6. Implement a program of equity participation or some form of revenue sharing on a local or regional basis to defray the long term costs of physical and social disruption.

7. Establish a priority for Inuit training and employment with respect to all government activities, government contracts and with private firms, especially those receiving tax concessions and other economic incentives from the governments of the respective Nation-States in the Inuit homeland.

8. Recognize the need for flexible management systems which allow the Inuit to pursue harvesting activities and cultural ceremonies while being employed in the cash economy.

9. Fully settle the Inuit claims to lands and waters traditionally used and occupied by the Inuit and claims for meaningful rights and governmental powers as a precondition of economic self-sufficiency and economic well-being.

10. Engage in discussions leading to a policy which respects the Inuit inhabitiants and the fragile fabric of the circumpolar region. Furthermore, the Inuit must have representation on the boards and committees responsible for the formulation of Arctic policy position within the Nation-States and on the discussion groups and negotiating teams during the negotiations of an overall policy for the circumpolar region.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-29

RESOLUTION OF THE COMMUNICATIONS COMMISSION OF THE INUIT CIRCUMPOLAR CONFERENCE.

WHEREAS, the work of the ICC Communications Commission has been active and operational since it was established in Nuuk, Greenland, in 1980; and

WHEREAS, there appears to be great benefit to the Inuit of the three countries to utilize all aspects of modern communications technology to protect, advance and enhance Inuit culture and language; and

WHEREAS, unnecessary and unwarranted obstacles of a political, administrative and regulatory nature inhibit the free and useful exchange of data, voice communication and other communicative instruments.

THEREFORE BE IT RESOLVED THAT the ICC Communications Commission undertake a systematic review to identify these obstacles with a view towards approaching the government and appropriate industry representatives to seek the development of a communications system intended to best serve the interests of the Inuit.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-30

RESOLUTION STATING THE INUIT CIRCUMPOLAR CONFERENCE CIRCUMPOLAR ARCTIC POLICY.

ACKNOWLEDGING, that we, the Inuit, since time immemorial have based our lives in the Arctic and sub-Arctic areas and coastal regions, which have provided the basis for our existence and culture, on a balance between man and nature; and

WHEREAS, we as Inuit declare ourselves as a distinct people with our own history, culture and mutual dependency with land and sea, and that it is only the boundaries of certain states that separate us; and

RECOGNIZING, that the most fundamental condition for our continued existence as a people is the enhancement of our society on our own terms; and

WHEREAS, we as a people are promoting lasting peace among individuals as well as nations; and

WHEREAS, we have witnessed the degradation of the Arctic environment and the pollution threat; and

WHEREAS, our renewable resources on land and in the sea are threatened with extinction as a result of ruthless exploitation; and

WHEREAS, our future self-determination requires national and international recognition of our economic, political, social and cultural rights and the right to our own judicial system; and

WHEREAS, the denial of adequate recognition from the surrounding world necessitates the mutual development of our knowledge, our traditions and our language; and

WHEREAS, the traditional knowledge of our people as to the unique nature of the Arctic provides an immeasurable contribution to the scientific world; and

WHEREAS, mutual solidarity and intercourse among the Inuit require the improvement of communications and infrastructure within the arctic region; and

WHEREAS, the pursuit of acquiring the recognition of our rights and interests require Inuit representation in the decision-making process on national and international levels; and

REFERRING, to the Charter of the Inuit Circumpolar Conference and the resolutions passed in pursuance thereof;

THEREFORE BE IT RESOLVED:

1. THAT the Inuit Circumpolar Conference strongly calls upon the appropriate national and international authorities to restrict the military offensive use of the Arctic at the earliest possible date;

2. THAT the Inuit Circumpolar Conference takes every step necessary towards the protection of the fragile Arctic environment, sea and land, taking into account any chemical, biological and noise pollution;

3. THAT the Inuit Circumpolar Conference in cooperation with local and regional Inuit authorities coordinates the efforts of protecting all renewable resources in the Arctic;

4. THAT the Inuit Circumpolar Conference coordinates and disseminates the existing knowledge of traditional and comtemporary fishing and hunting methods, and with due respect for traditional subsistence lifestyle, supports the creation of production entities that equitably distributes and invests the profits to the greatest possible benefit of the Inuit;

5. THAT the Inuit Circumpolar Conference supports any initiative by Inuit to gain full economic, political and judicial rights in our homeland, including legislative and administrative powers; and further that the Inuit Circumpolar Conference requires recognition of these basic rights from the national authorities of Canada, the United States of America and Denmark, cf. the United Nation's Covenant of December 16, 1966, on civil and political rights;

6. THAT the Inuit Circumpolar Conference immediately contacts all relevant national and international authorities in order to improve the health and working conditions of the Inuit, including social welfare, worker safety and housing, and to promote preference to the employment of Inuit;

7. THAT the Inuit Circumpolar Conference initiates and supports exchange programs among the Inuit, and the Inuit Circumpolar Conference requests from the governments of Canada, the United States of America and Denmark that all restrictions for a free and unrestricted travel throughout the Inuit homeland be removed; further that the Inuit Circumpolar Conference be the initiator of establishing central education and information centers, accessible for all Inuit and aimed at studies relevant to Inuit requirements;

8. THAT the Inuit Circumpolar Conference initiate and participate to the greatest possible extent in facilitating the improvement of the Arctic region through economic and administrative assistance from the governments of Canada, the United States of America and Denmark; and furthermore, calls upon these three governments to develop infrastructures according to the needs of the Inuit;

9. THAT the Inuit Cirucmpolar Conference demands proper representation in all national and international organizations, institutions and agencies vital to the interests of Inuit.

(See footnotes annexed hereto)

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

FOOTNOTES

App. 1) Cf. res. no. 77-11

App. 2) Cf. res. no. 77-05, 77-06, 07-80, 08-80, 09-80, 13-80, 17-30, and 20-80.

App. 3) See res. no. 77-06, 77-15, 77-17, 08-80, 09-80, 11-80, 22-80, 24-80, and 25-80.

App. 4) Cf. res. no. 77-09, 77-12, 77-16, 04-80, 15-80, 16-80, 19-80, and 21-80.

App. 5) The UNITED NATIONS Conventions of December 16, 1966 on civil and political rights respectively and also on economic, social and cultural rights, and also cf. ICC res. no. 77-02, 77-03, 77-07, 77-04, 06-80, and 18-80.

App. 6) Cf. res. no. 77-08, 77-10, 77-12, 05-80, 23-80, and 26-80.

App. 7) Cf. res. no. 77-04, 04-80, and 30-80.

App. 8) Cf. res. no. 77-06, 77-12, 77-13, 28-80, and 29-80.

App. 9) Cf. res. no. 77-08, 12-80, 14-80.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-01

RESOLUTION STATING THE INUIT CIRCUMPOLAR CONFERENCE POSITION ON NUCLEAR ACTIVITY IN THE ARCTIC AND SUB-ARCTIC AREAS.

WHEREAS, the Inuit Circumpolar Conference developed a fundamental policy restricting the arctic and sub-arctic to those uses which are peaceful and environmentally safe;

WHEREAS, this policy is reflected in the several resolutions adopted by the General Assembly and the Executive Council since the formation of the Inuit Circumpolar Conference in 1977;

WHEREAS, the governments of the United States and Canada intend to cooperate with each other to test the cruise missile in our northern Canadian homeland;

WHEREAS, the government of the United States has entertained the idea of basing the massive MX missile system in our Alaskan homeland;

WHEREAS, the Atomic Energy Canada, Limited, plans to test the environmental and economic feasibility of the mini-CANDU and the SLOWPOKE 3 (small nuclear reactors for generating electricity) in the Canadian north since they are prohibited from testing them in the Canadian south due to environmental restrictions; and

WHEREAS, the arctic and sub-arctic shall not be used for any nuclear testing or as a nuclear dump-site;

NOW THEREFORE BE IT RESOLVED THAT the Inuit Circumpolar Conference emphatically restates its nuclear position:

1. that the arctic and sub-arctic be used for purposes that are peaceful and environmentally safe;
2. that there shall be no nuclear testing or nuclear devices in the arctic or sub-arctic;
3. that there shall be no nuclear dump-sites in the arctic or sub-arctic;
4. that exploration and exploitation of uranium, thorium, lithium or other materials related to the nuclear industry in our homeland be prohibited;

FURTHERMORE BE IT RESOLVED THAT the Canadian government be notified of our opposition to the testing of the cruise missile in our Canadian homeland and that they be requested to refrain from such tests;

FURTHERMORE BE IT RESOLVED THAT the Atomic Energy Canada, Limited, be notified of our opposition to the testing of nuclear reactors in the Canadian arctic or sub-arctic and that they be notified to refrain from such tests;

FURTHERMORE BE IT RESOLVED THAT the United States government be notified of our opposition to the placement of the MX missile in our Alaskan homeland and that they be requested to cease with any such plan;

FURTHERMORE BE IT RESOLVED THAT the Inuit Circumpolar Conference study and research current international treaties to determine whether or not they comply with the Inuit Circumpolar Conference Arctic Policy; and

FURTHERMORE BE IT RESOLVED THAT the Executive Council of the Inuit Circumpolar Conference lobby the United Nations and various international orgnaizations to encourage members of the United Nations to adopt a policy for a nuclear free zone in the arctic.

INTRODUCED THIS 29th DAY OF JULY, 1983.

ADOPTED THIS 29th DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-02

RESOLUTION CALLING FOR EQUAL REPRESENTATION OF WOMEN WITHIN THE INUIT CIRCUMPOLAR CONFERENCE.

WHEREAS, in the tradition of our ancestors, both sexes were involved in dealing with the issues from time immemorial; and

WHEREAS, the Inuit Circumpolar women from Alaska, Canada, and Greenland based on sexual equality need representation at all levels, international, national, regional, and local; and

WHEREAS, there is not enough women representation during this Inuit Circumpolar Conference;

THEREFORE BE IT RESOLVED THAT the Inuit women of Alaska, Canada and Greenland, whenever possible, be guaranteed by each Member Party of the Inuit Circumpolar Conference equal representation within the Inuit Circumpolar Conference;

FURTHERMORE, BE IT RESOLVED THAT a Committee for the Status of Inuit Circumpolar Women be established under the Inuit Circumpolar Conference.

INTRODUCED THIS 29th DAY OF JULY, 1983.

ADOPTED THIS 29th DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-03

RESOLUTION CALLING FOR SOVIET INUIT PARTICIPATION WITHIN THE INUIT CIRCUMPOLAR CONFERENCE

WHEREAS, the Inuit Circumpolar Conference is an international Inuit forum;

AND WHEREAS, the purposes of the Inuit Circumpolar Conference are as follows:

1. to strengthen unity among the Inuit of the circumpolar region;
2. to promote Inuit rights and interests on the international level;
3. to ensure adequate Inuit participation in political, economic and social institutions which we Inuit deem relevant;
4. to promote greater self-sufficiency of the Inuit in the circumpolar region;
5. to ensure the endurance and the growth of Inuit culture and societies for both present and future generations;
6. to promote long-term management and protection of arctic and sub-arctic wildlife, environment and biological productivity; and
7. to promote wise management and use of non-renewable resources in the circumpolar region and incorporating such resources in the present and future development of Inuit economics, taking into account other Inuit interests.

AND WHEREAS, the Soviet Inuit are family members in the international Inuit community;

AND WHEREAS, the Soviet Inuit have a right to participate in international discussions and debates regarding issues that bear directly upon Inuit interests;

AND WHEREAS, the Inuit Circumpolar Conference has extended formal and informal invitations to the Soviet Union requesting Soviet Inuit participation in its proceedings;

AND WHEREAS, an apparent misunderstanding has prompted the Soviet government to deny Soviet Inuit the right to participate in the proceedings of the Inuit Circumpolar Conference;

AND WHEREAS, the Inuit Circumpolar Conference desires to promote harmonious relations among all circumpolar peoples;

AND WHEREAS, the Inuit of Canada, the United States, and Greenland acknowledge the right of the Soviet Inuit to participate in the Inuit Circumpolar Conference proceedings;

THEREFORE, THE INUIT CIRCUMPOLAR CONFERENCE hereby extends to the Soviet Inuit participatory rights to discuss and debate Inuit issues during its Executive Council meetings;

FURTHERMORE, THE INUIT CIRCUMPOLAR CONFERENCE hereby establishes special participatory status for the Soviet Inuit to discuss and debate issues of concern to the circumpolar Inuit community during its Executive Council meetings;

FURTHERMORE, this special participatory status for the Soviet Inuit shall remain in effect until the Soviet Inuit establish full official membership in the Inuit Circumpolar Conference;

FURTHERMORE, the circumpolar Inuit community, living under four national governments, desire that the national flag of the Union of Soviet Socialist Republics, be displayed during all Inuit Circumpolar Conference General Assembly meetings;

AND FURTHERMORE, all Inuit Circumpolar Conference meetings shall be announced to the Soviet Inuit through the good offices of the Soviet Embassy in Ottawa, Canada.

INTRODUCED THIS 27th DAY OF JULY, 1983.

ADOPTED THIS 27th DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-04

RESOLUTION CALLING FOR SUPPORT OF THE ALEUT PEOPLE OF ALASKA WITH RESPECT TO THE WORLD WAR II COMMISSION CREATED BY THE CARTER ADMINISTRATION.

WHEREAS, the Aleuts are one of the indigenous people of the earth;

WHEREAS, since 1867 the Aleuts became citizens of the United States of America as stipulated in the original Bill of Sale of Alaska to the United States of America;

WHEREAS, the Constitutional rights of the Aleuts were divested for no substantial reason during World War II and this was compounded by the fact that of the diverse population in the Aleutian and Pribilof Island only Aleuts were removed;

WHEREAS, the removal of some of the Aleuts from their home Islands to four locations in southeastern Alaska in 1942 caused the Cessation of those removed Aleuts culture for approximately two and a half years;

WHEREAS, the damages and losses incurred infinitely surpassed those commonly calculated monetarily;

WHEREAS, the conditions these Aleuts were exposed to were horrific, acclimatization being the least;

WHEREAS, prior to their removal, the Attuans were imprisoned by Japanese; the villages of Atka observed the demolition of their village by U.S. Naval gunfire; Amakanak and Unalaska Islands sustained two air attacks by the Japanese;

WHEREAS, during their absence their home islands were transformed into military fortresses thereby permanently damaging existing ecological systems, their homes and churches were vandalized by U.S. military personnel to the point in some cases making them unlivable or in severe disrepair;

WHEREAS, the authorities admit no viable plan was devised prior to removal, during the absence and before or after return of said Aleuts for in the least, creature comforts;

WHEREAS, the losses and damages incurred because of this experience were inhumane and are transferred from one generation to the next; we suffer in our efforts;

WHEREAS, the reparation demands are not unreasonable considering the scope and depth of said damages and losses;

THEREFORE BE IT RESOLVED THAT this organization known as the Inuit Circumpolar Conference support those recommendations of the World War II Commission enacted into law by the Carter Administration of the Government of the United States of America.

INTRODUCED THIS 29th DAY OF JULY, 1983.

ADOPTED THIS 29th DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-05

RESOUTION CALLING FOR ICC SUPPORT OF THE CANADIAN INUIT EFFORTS IN CONSTITUTIONAL WORK WITHIN THE CANADIAN GOVERNMENT.

WHEREAS, Canadian Inuit and other Aboriginal Peoples of Canada are in the process of negotiating further constitutional changes and the entrenchment of aboriginal rights, including rights of Inuit on the international level, in the Canadian Constitution with federal and provincial governments; and

WHEREAS, this process may take many years, suffer many delays and meet resistance from various parties to the process; and

WHEREAS, various Canadian government leaders have acknowledged the leading role being played by Inuit on behalf of all Canadian aboriginal peoples in this process of further constitutional changes; and

WHEREAS, this work is accomplishing significant advances in human rights and constitutional development and is therefore relevant to the peoples of many countries;

THEREFORE BE IT RESOLVED THAT the Inuit Circumpolar Conference strongly support the initiatives of Canadian Inuit in this work;

BE IT FURTHER RESOLVED THAT the Inuit Circumpolar Conference adknowledge the efforts of the Canadian government and some provinces to promote constitutional change involving aboriginal peoples;

BE IT FURTHER RESOLVED THAT the Inuit Circumpolar Conference call upon all peoples and countries to support the constitutional work taking place in Canada, and the international rights of Inuit;

BE IT FURTHER RESOLVED THAT the Inuit Circumpolar Conference disseminate information about this work in order to assist peoples undertaking similar efforts elsewhere in the world.

INTRODUCED THIS 27th DAY OF JULY, 1983.

ADOPTED THIS 27th DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-06

RESOLUTION ADDRESSING CANADIAN INUIT ART.

WHEREAS, Inuit art is recognized as an important aspect of Inuit cultural heritage; and

WHEREAS, Inuit art is recognized in the international community as a unique form of Canadian art; and

WHEREAS, the creation of Inuit art is one of the most important economic activities of most Inuit communities; and

WHEREAS, the devaluation of Inuit art has had a devastating effect on the fragile Inuit economy; and

WHEREAS, recent efforts by multi-national lobby-groups has resulted in the banning of seal products by the European Community which has resulted in another severe blow to the Inuit economy; and

WHEREAS, the appearance of fake Inuit art in large numbers in Canada has and will have the effect of devaluation of Inuit art both in terms of price and integrity; and

WHEREAS, this is not acceptable to Inuit; and

WHEREAS, the Board of Directors of Inuit Tapirisat of Canada recently passed a resolution calling on the Government of Canada to introduce immediate legislation to protect Inuit cultural heritage and the integrity of Inuit art;

THEREFORE BE IT RESOLVED THAT the Third General Assembly of the Inuit Circumpolar Conference requests the Government of Canada to introduce the desired legislation;

BE IT FURTHER RESOLVED THAT this assembly requests the Governments of the United States and Denmark to introduce similar measures in consultation with Inuit of these countries.

INTRODUCED THIS 28th DAY OF JULY, 1983.

ADOPTED THIS 28th DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-07

RESOLUTION RELATING TO PROTECTION OF THE NORTON SOUND, BERING SEA AND ALASKA ENVIRONMENT.

WHEREAS, the Inuit Circumpolar Conference (ICC) is an international organization of Inuit people of Alaska, Canada and Greenland which is recognized as the voice of Inuit in world affairs; and

WHEREAS, the ICC maintains, as a primary overriding goal, the development of sound arctic policies which shall serve to protect the Inuit way of life, Inuit culture, and including protection of the environment and biological resources throughout the Inuit homeland; and

WHEREAS, the Secretary of the Interior of the United States of America has conducted OCS Oil and Gas Lease Sale No. 57, in which the U.S. has sold rights to explore and develop oil and gas reserves underlying the Norton Sound region of the Bering Sea; and

WHEREAS, Norton Sound OCS Lease Sale No. 57 was conducted over the strenuous and unanimous objection of the 75 Inuit communities located on Norton Sound or along adjacent waterways, all of which are dependent upon the abundant biological resources associated with the Norton Sound environment; and

WHEREAS, the affected Inuit communities have expressed concern that insufficient information is available about the effects of oil and gas development, including effects of oil contaminants and acoustical pollution, upon marine mammals, including the bowhead and beluga whales, ogrook, and spotted seals and other seals, walrus, and other marine mammals upon which Inuit of the region are dependent; and

WHEREAS, Inuit of the Norton Sound region are seriously concerned about the affects of oil and gas development upon fisheries stocks of the area, including king salmon, silver salmon, sockeye and pink salmon, ling cod, whitefish, herring, tomcod, trout, arctic char, pike, blackfish, grayling, and other salt and fresh water fish of the region; and

WHEREAS, Inuit of the region, together with members of the Alaska and U.S. scientific communities who are most expert in their knowledge of the behavior of the Norton Sound environment, have evidenced serious concern that insufficient knowledge exists about current and weather behavior in the Bering Sea, effects of oil contaminants upon deposit feeding organisms, impacts of pollutants on Bering Sea sedimentology, affects of accoustical pollution from tankers, seismic boats, and other industrial activity associated with oil and gas exploration upon Norton Sound biological resources, and that the lack of such knowledge makes it impractical to permit a decision to develop Norton Sound offshore oil and gas reserves at the present time; and

WHEREAS, the local, indigenous inhabitants of the region are dependent upon land animals living in tidelands and coastal areas of Norton Sound which may be seriously affected by industrial contaminants, including moose, bear, beaver, caribour, reindeer, mink, otter, muskrats, rabbits, wolverine, fox, and other land animals, including migratory and indigenous waterfowl such as cackling, snow, Canadian, emperor and white-fronted geese, swans, numerous species of ducks, snipes, and seabirds, as well as abundant supplies of berries and edible plants located in adjacent tidelands; and

WHEREAS, neither the U.S. government nor the oil industry nor the State of Alaska has devoted significant effort to develop an adequate plan and necessary resources to monitor the status of the biological resources of Norton Sound, including Inuit inhabitants, during all phases of exploration and development to assure adequate protection against adverse impacts; and

WHEREAS, Inuit of the Bering Straits and Yukon-Kuskokwim regions surrounding Norton Basin have been sufficiently concerned that adequate technology currently exists to permit the safe extraction of oil from Norton Sound such that the affected Inuit communities joined together to seek an order from the U.S. courts to void the lease sale; and

WHEREAS, the Inuit Circumpolar Confrence policy on OCS oil and gas development, as promulgated by the 1980 General Assembly meeting at Nuuk, Greenland, is that no offshore exploration should occur in coastal regions of the Inuit homeland;

THEREFORE BE IT RESOLVED THAT the 1983 General Assembly of the Inuit Circumpolar Confrence, meeting at Frobisher Bay, NWT, hereby calls upon the U.S. Government to give proper concern to the protection of the Inuit way of life in the Norton Sound, Bering Sea region by voiding leases sold in Oil and Gas OCS Sale No. 57; and

BE IT FURTHER RESOLVED THAT the 1983 ICC General Assembly hereby requests and authorizes the President and Executive Council of the ICC to take every appropriate opportunity to advocate the cause of the Bering Sea Inuit in seeking to have Norton Sound OCS Sale No. 57 voided; and

BE IT FURTHER RESOLVED THAT the ICC requests the assistance of appropriate international organizations, including but not limited to UNESCO, to establish a long-term, comprehensive monitoring program throughout the circumpolar offshore areas to determine the affect of OCS oil and gas development on the Inuit way of life in Norton Sound, as well as throughout the arctic regions, including an ongoing effort to monitor the status of biological resources during all phases of OCS oil and gas development.

INTRODUCED THIS 28th DAY OF JULY, 1983.

ADOPTED THIS 28th DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-08

RESOLUTION CALLING UPON THE INUIT CIRCUMPOLAR CONFERENCE TO SUPPORT PLAINTIFFS IN THE LAW SUIT ICAS and UIC et al. vs. UNITED STATES et al.

WHEREAS, the Inuit Circumpolar Conference supports the efforts of other Inuit organizations to obtain legal recognition and protection of native rights in all areas used and occupied by the Inuit people, including water areas; and

WHEREAS, two Inuit groups based in the United States, namely, the Inupiat Community of the Arctic Slope (ICAS) and Ukpeagvik Inupiat Corporation (UIC), together with several Inuit individuals, have gone to the American federal court system to seek recognition and enforcement of Inuit rights in offshore areas used and occupied by the Inuit residing in that area, including offshore areas up to 60 miles from shore; and

WHEREAS, the above Inuit groups and individuals have sued the United States, the State of Alaska and several oil companies in the case known as ICAS and UIC et al. vs. United States et al., in the federal district court in Alaska, and have sought to intervene in United States vs. Alaska, a boundary dispute pending in the United States Supreme Court.

THEREFORE BE IT RESOLVED THAT the Inuit Circumpolar Conference strongly supports the efforts of the Inuit plaintiffs in ICAS and UIC et al. vs. United States et al. and the Inuit petitioner-intervenors in United States vs. Alaska; and

BE IT FURTHER RESOLVED THAT the staff of ICC cooperate with ICAS, UIC, and their attorneys in the areas of information gathering, research, formulation of strategy, and publicity.

INTRODUCED THIS 28th DAY OF JULY, 1983.

ADOPTED THIS 28th DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-09

RESOLUTION CREATING A PERMANENT INUIT CIRCUMPOLAR CONFERENCE ELDERS ORGANIZATION CALLED THE ICC ELDERS CONFERENCE.

WHEREAS, pursuant to Inuit Circumpolar Conference Resolution Number 05-80, Inuit Elders from Alaska, Canada and Greenland have met together on July 25-31, in Frobisher Bay, NWT, Canada; and

WHEREAS, to further the purpose of Resolution 05-80 the Elders believe it is necessary that the Elders Conference be constituted as a continuous permanent organization within the ICC so that the Elders task of transmitting their knowledge will be facilitated; and

WHEREAS, the organization of Elders has set its basis on the Preamble and Article 2 and 3 of the Inuit Circumpolar Conference; and

WHEREAS, the Elders Conference has unanimously agreed on an administrative organizational structure, which is attached to and included in this resolution; and

WHEREAS, to be effective, a permanent Elders Conference will require adequate staff and funding;

THEREFORE BE IT RESOLVED THAT the Inuit Circumpolar Conference approves the creation of a continuous, permanent Elders Organization, to be called the ICC Elders Conference, within the ICC, for the purpose of furthering the aims of ICC Resolution 05-80; and

BE IT FURTHER RESOLVED THAT the ICC Elders Conference administrative organizational structure as submitted to the ICC General Assembly, is hereby approved; and

BE IT FURTHER RESOLVED THAT the staff of the ICC, and such funding as the General Assembly shall from time to time deem appropriate, shall be made available to the ICC Elders Conference to facilitate its endeavors.

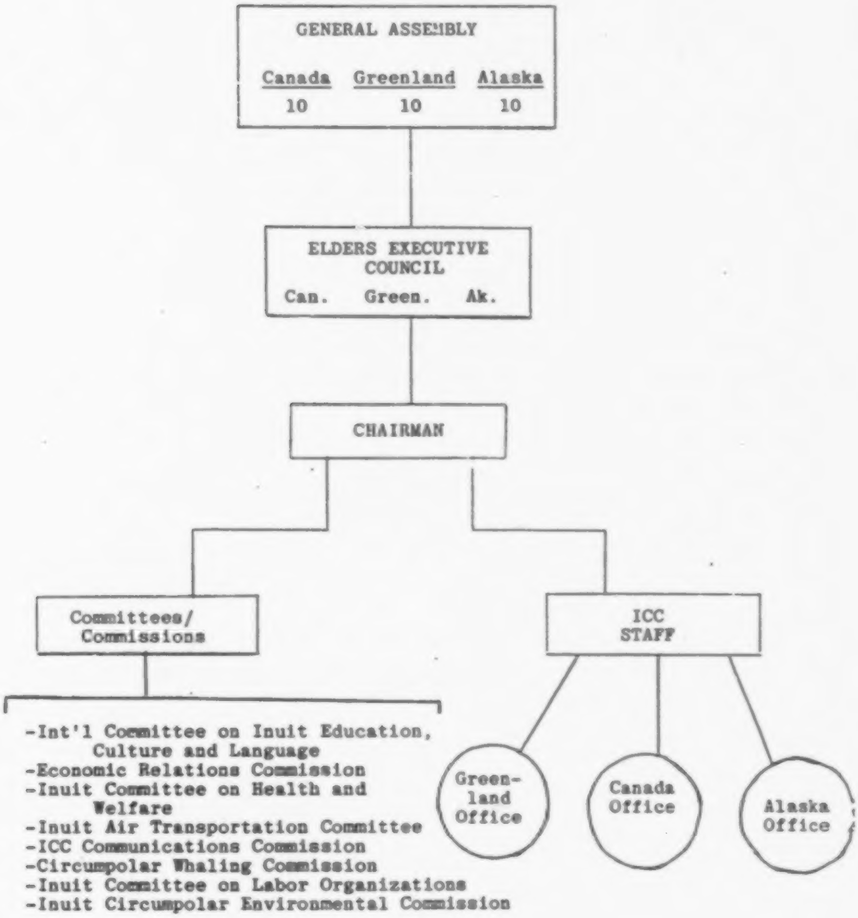
INTRODUCED THIS 29th DAY OF JULY, 1983.

ADOPTED THIS 29th DAY OF JULY, 1983.

Respectfully submitted by Thomas P. Brower, President of the ICC Elders Conference.

INUIT CIRCUMPOLAR CONFERENCE

ELDERS CONFERENCE


GENERAL ASSEMBLY
Canada
10
Greenland
10
Alaska
10
ELDERS EXECUTIVE COUNCIL
Can.
Green.
Ak.
CHAIRMAN
Committees/ Commissions
ICC STAFF
-Int'l Committee on Inuit Education, Culture and Language
-Economic Relations Commission
-Inuit Committee on Health and Welfare
-Inuit Air Transportation Committee
-ICC Communications Commission
-Circumpolar Whaling Commission
-Inuit Committee on Labor Organizations
-Inuit Circumpolar Environmental Commission
Greenland Office
Canada Office
Alaska Office

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-10

RESOLUTION TO ASSOCIATE THE INUIT CIRCUMPOLAR CONFERENCE WITH THE WORLD COUNCIL OF INDIGENOUS PEOPLES.

WHEREAS, the Inuit peoples of the arctic recognize their solidarity with the struggles of other native peoples throughout the world to achieve self-determination and the free exercise of their rights as guaranteed in the United Nations Declaration of Human Rights;

WHEREAS, the members of the Inuit Circumpolar Conference extend a special concern to those Native Peoples of Central and South America who are undergoing persecution and systematic elimination by agencies of their own governments;

WHEREAS, the World Council of Indigenous Peoples has been active in promoting the unity of Native Peoples throughout the world as the best means of eliminating this oppression and reinforcing the strength of Native organizations;

WHEREAS, the Inuit peoples of the arctic have sent their own representatives to the World Council of Indigenous Peoples since its inception at Port Alberny in 1975;

WHEREAS, the World Council of Indigenous Peoples has consistently supported the founding and organization of the ICC and the goals of its national memberships;

WHEREAS, the President of the WCIP, Jose Carlos Morales, has addressed our Third General Assembly in Iqaluit to offer his support and to invite us to attend the next World Assembly of Native Peoples to be held in Oaxaca, Mexico in June 1984;

THEREFORE BE IT RESOLVED THAT by this Assembly that appropriate steps be taken by the ICC to associate this body with the World Council of Indigenous Peoples and that representation be sent to the World Assembly of Native Peoples;

BE IT FURTHER RESOLVED THAT the Inuit Circumpolar Conference seek appropriate means to offer aid and support to those Native Peoples of Central and South America suffering the tribulations of war, persecution, and relocation.

INTRODUCED ON THIS 30th DAY OF JULY, 1983.

ADOPTED ON THIS 30th DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-11

RESOLUTION ADDRESSING THE WORLD COUNCIL OF CHURCHES POLICY STATEMENT ON "LAND RIGHTS FOR INDIGENOUS PEOPLES".

WHEREAS, the World Council of Churches is currently holding its Assembly in Vancouver, Canada for the purposes of reviewing, ratifying and promoting various policy statements; and

WHEREAS, one policy to be discussed and voted upon at the W.C.C. meeting is entitled "Land Rights for Indigenous Peoples"; and

WHEREAS this policy calls for the active support, both financially and morally of the W.C.C. to work towards the further enhancement and further recognition of indigenous rights the world over; and

WHEREAS, the policy calls for the active lobbying of the W.C.C. on behalf of and in consultation with the indigenous peoples at the international level through the United Nations, various governments and N.G.O.'s; and

WHEREAS, the policy supports the creation of a United Nations' working group on indigenous populations and urges the United Nations through its Commission on Human Rights to give highest priority to the elaboration of appropriate international instruments for the protection and implementation of the rights of the indigenous peoples; and

WHEREAS, the policy calls for the highlighting of the land rights issue confronting indigenous peoples the world over; and

WHEREAS, the Canadian Inuit Committee on National Issues (ICNI) will be present in Vancouver to lobby the W.C.C. on behalf of the Inuit;

THEREFORE BE IT RESOLVED THAT the Inuit Circumpolar Conference endorses and encourages the work of the World

Council of Churches with regard to the rights of the indigenous peoples and urges greater collaboration between all levels of the organizations of the indigenous peoples and the World Council of Churches;

BE IT FURTHER RESOLVED THAT the Inuit Circumpolar Conference, representing Inuit of Canada, Greenland and Alaska, supports the broad concepts underlying the policy eintitled: "Land Rights for Indigenous People" and urges the assembly of the W.C.C. to endorse any such policy in support of the rights of the indigenous peoples of the world;

BE IT FURTHER RESOLVED THAT the Inuit Circumpolar Conference hereby instructs the Inuit Committee on National Issues (ICNI) to read this resolution to the assembly of the W.C.C. and to make known the views of Inuit of the circumpolar region to the World Council of Churches delegation.

INTRODUCED THIS 30th DAY OF JULY, 1983.

ADOPTED THIS 30th DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-12

RESOLUTION CALLING FOR THE PROTECTION OF THE NORTH SLOPE OF THE YUKON.

WHEREAS, the North Slope of the Yukon Territory is recognized to be among the most environmentally sensitive areas in Canada, not only as caribou calving grounds, but also as important bird and marine mammal habitats; and

WHEREAS, this area is the traditional hunting grounds of the Inuvialuit, Old Crow Gwichen, and the Dene; and

WHEREAS, the Canadian government through Order-in-Council, acting on recommendations of the Mackenzie Valley Pipeline Inquiry conducted by the Honorable Justice Thomas Berger, has recongized the vital significance of protecting this area and withdrew this area for a national wilderness park and other conservation purposes; and

WHEREAS, aboriginal rights and Canadian Native land claims are not yet settled in this area; and

WHEREAS, the Inuit, Gwichen and Dene peoples and the governments of Canada and the Untied States and Alaska have been working to establish an international management regime for the protection of the Porcupine caribou herd, its habitat, and traditional uses.

THEREFORE BE IT RESOLVED THAT the Inuit Circumpolar Conference call upon the Canadian government to prohibit facility siting, rights of way, corridors or any similar works from being established in the North Yukon without the settlement of all land claims in that area (COPE, CYI, Dene);

BE IT FURTHER RESOLVED THAT such land claims settlements are to be done with full consideration and participation of those communities which may be impacted by such development.

INTRODUCED THIS 30th DAY OF JULY, 1983.

ADOPTED THIS 30th DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-13

RESOLUTION ADDRESSING THE INUIT CIRCUMPOLAR CONFERENCE CONSULTATIVE STATUS TO THE UNITED NATIONS.

WHEREAS, the Economic and Social Council (ECOSOC) of the United Nations has granted Non-Governmental Organization consultative status (Category II) to the Inuit Circumpolar Conference; and

WHEREAS, in granting such status the United Nations has recognized the role and committment of the ICC in Arctic environmental protection and cooperation, and has recognized the value of Inuit knowledge and culture, and has recognized the importance of Inuit survival as an indigenous population; and

WHEREAS, in granting NGO status the United Nations expects that the ICC will significantly contribute to the work of the United Nations; and

WHEREAS, protection of the arctic environment is critical not only to Inuit but to all the world reliant on the ecosystems of our oceans; and

WHEREAS, current natural resource exploration and development is occuring in the arctic with far-reaching effects on the environment, the renewable resources, and the subsistence and cultural aspects of the Inuit way of life; and

WHEREAS, there is not sufficient arctic research and policy among arctic rim nations to ensure that Inuit are not made to sacrifice our land, livelihood, subsistence activities, and our culture as the price for arctic resource development; and

WHEREAS, arctic rim nations have not entered into cooperative discussions and have not consulted with Inuit regarding development of international coastal zone management policies for the arctic to protect the arctic and its residents from environmental degradation.

THEREFORE BE IT RESOLVED THAT:

1. the Inuit Circumpolar Conference will work to fulfill its resolutions through work with the ECOSOC Standing Committee on NGO's, the ECOSOC Standing Committee on Science and Technology for Development, the ECOSOC full meetings in Geneva and New york, U.N. activities in Vienna, the United Nations Environment Program based in Nairobi, the ECOSOC Sub-Committee on Indigenous People of the United Nations Commission on Human Rights in Geneva, the United Nations Development Program, the activities of the General Assembly in New York and Geneva, special conferences of the United Nations, and other United Nations organizations as their activities relate to the special areas of Inuit interest and expertise.

2. the Inuit Circumpolar Conference will contribute to the Untied Nations work in non-arctic areas where Inuit knowledge has relevant application in reciprocation for United Nation's work with Inuit.

3. the Inuit Circumpolar Conference will work to achieve United Nations sponsorship of an international arctic rim nation working group to begin cooperative efforts with Inuit to ensure arctic environmental protection and Inuit survival.

INTRODUCED THIS 30th DAY OF JULY, 1983.

ADOPTED THIS 30th DAY OF JULY, 1983.

INUIT CIRUCMPOLAR CONFERENCE

RESOLUTION 83-14

RESOLUTION ADDRESSING THE PROPOSED CANADA-DENMARK CONVENTION ON MARINE ENVIRONMENT COOPERATION.

WHEREAS, Canada and Denmark are presently engaged in negotiations concerning an International Marine Environment Cooperation Agreement;

WHEREAS, the environmental protection of the Marine Environment of this region is a fundamental concern to Inuit of the circumpolar region;

WHEREAS, the above proposed Canada-Denmark International Marine Environment Cooperation Agreement has been negotiated without consultation with or participation of Inuit and may shortly be signed by these countries;

WHEREAS, the Inuit Circumpolar Conference considers Inuit consultation and participation as fundamental to environmental protection in the circumpolar region.

THEREFORE BE IT RESOLVED THAT the governments of Canada and Denmark immediately halt their negotiations in regard to the above Agreement and provide the Inuit Circumpolar Conference with a copy of whatever latest draft exists in this regard so that the Inuit Circumpolar Conference can have an adequate opportunity to review and comment upon said draft;

BE IT FURTHER RESOLVED THAT the governments of Canada and Denmark in the future consult with and provide meaningful participation to Inuit of the circumpolar region through the Inuit Circumpolar Conference with respect to any international discussions or negotiations affecting the environment and resources of the circumpolar region.

INTRODUCED THIS 30th DAY OF JULY, 1983.

ADOPTED THIS 30th DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-15

RESOLUTION ON MIGRATORY BIRDS.

WHEREAS, the Inuit Circumpolar Conference represents environmental interests of its Inuit members from arctic rim nations; and

WHEREAS, Inuit members from the United States and Canada have brought the issue of legalization of the spring harvest of migratory waterfowl to the attention of the ICC; and

WHEREAS, the individual state's Inuit delegates have discussed the government to government meeting by United States and Canadian Wildlife officials to draft a negotiators report to accompany the text of the recently amended Protocol on Migratory Waterfowl that legalizes the spring harvest of these birds in the rural areas of Alaska and Canada under regulations promulgated by each nation; and

WHEREAS, both the United States and Canadian Inuit delegations have reported concerns for the failure by both Federal governments to meaningfully involve representatives from their respective Inuit constituencies in the development of negotiating text involving intent on management goals and restrictions on spring take that will significantly affect existing hunting patterns of the Inuit people of both nations; and

WHEREAS, the Inuit of Alaska have undertaken their own program of information and education among their people to exchange biological and social information not only about conservation of the waterfowl in question but public policy issues on the resource and dual planning with government and private interests in the continental U.S.; and

WHEREAS, the Inuit of Nunavut have negotiated with their government on Wildlife Management and have initiated an agreement-in-principle; and

WHEREAS, the James Bay Agreement of Northern Quebec has provided the Inuit of that region the opportunity to be effectively involved in the management of their wildlife resources; and

WHEREAS, COPE is in the process of negotiating a land claims agreement which contains provisions for their involvement in the management of their wildlife resources; and

WHEREAS, the Inuit of Labrador will soon be negotiating their role in the management of their lands and resources.

THEREFORE BE IT RESOLVED THAT the Third General Assembly of the Inuit Circumpolar Conference calls on the Federal Governments of both nations to postpone their scheduled meeting until such time that the representatives of the Inuit from each nation have been consulted about their respective governments negotiating principles and goals; and

BE IT FURTHER RESOLVED THAT the negotiating committees of each country be broadened to include representatives from the Inuit peoples of both nations, and in regard to the United States, delegates from the State of Alaska; and

BE IT FURTHER RESOLVED THAT the Inuit of both countries be involved in the drafting of the regulations of the Migratory Bird Treaty Act.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-16

RESOLUTION ADDRESSING A UNIFORM WRITING SYSTEM.

WHEREAS, the native language of the Inuit is technically one language; its spectrum of dialects spreads geographically from northern Alaska, through Canada and Greenland. Within this spectrum there exists a high degree of mutual intelligibility between Inuit speakers. Regional designations such as Kalaallisut (Greenland), Inuktitut, Inuvialuktut, Inuttut (Canada) and Inupiaq (Alaska) indicate only the noticeable dialectal differences that have evolved over time. Inuit who are unfamiliar with a particular region's dialect have only to spend several months there to attain oral fluency in its dialect;

WHEREAS, in spite of this ease in oral communication, however, Inuit speakers are unable to communicate in a written medium understood throughout the Inuit homeland. Written Inuit language development in each region occurred at different times and these circumstances resulted in several different current writing systems;

WHEREAS, during the past decade, as the Inuit perceived the necessity of acting as a unified force to deal with issues affecting their lives, they have transcended existing political barriers established by other cultures, to effect changes resulting in their growing solidarity. This is not to say that international boundaries are not respected. Though efforts in the political arena are much more visible, work on other culturally-related activities carries equal weight; the issues affecting Inuit life include education, art, subsistence hunting, economic development, language, religion, traditional ceremonies and continuation of the communal sharing that is a marked Inuit trait;

WHEREAS, language is a fundamental component of any culture and distinguishes that culture. The Inuit are especially aware of this aspect of their lives; recognition of its importance is underscored by the knowledge that levels of fluency in the Inuit language, especially in Alaska, have diminished through time;

WHEREAS, possibilities for a unified Inuit writing system have been given careful study and it has been found that a visually more uniform writing system can be achieved by altering symbols used by the Alaskan Inuit so that the same symbol represents the same sound throughout the Inuit language;

WHEREAS, the differences in the writing systems impose purely artificial barriers to a potential Inuit language unity.

THEREFORE BE IT RESOLVED THAT the Inuit Circumpolar Conference respectfully requests the Alaskan Inuit to consider making the following changes in their writing system:

a. that ġ be replaced by r
b. that ŋ be replaced by ng
c. that r be replaced by z
d. that sr be replaced by ṣ
e. that nŋ be replaced by nng
f. that ŋŋ be replaced by ngg

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-19

RESOLUTION ADDRESSING THE INALIENABLE NATURE OF INUIT SUBSISTENCE RIGHTS.

WHEREAS, Article 1(2) of the International Covenant on Civil and Political Rights provides that a people may not be deprived of its own means of subsistence; and

WHEREAS, subsistence rights are thus inalienable rights; and

WHEREAS, Inuit subsistence hunting, fishing, trapping, whaling and gathering rights are thus inalienable human rights; and

WHEREAS, Inuit subsistence hunting, fishing, trapping, whaling and gathering rights must take preference over any non-subsistence use of wildlife resources of the circumpolar region; and

WHEREAS, human rights such as Iniut rights must not be extinguished as part of any aboriginal claims settlement;

THEREFORE BE IT RESOLVED THAT the Third General Assembly of the Inuit Circumpolar Conference declare Inuit subsistence hunting, fishing, trapping, whaling and gathering rights as inalienable human rights which should not be extinguished by any past or future aboriginal claim settlements;

BE IT FURTHER RESOLVED THAT Inuit subsistence hunting, fishing, trapping, whaling and gathering rights necessarily include the right to meaningfully participate in management of these resources and the habitats of such resources;

BE IT FURTHER RESOLVED THAT the Inuit Circumpolar Conference call upon the governments of United States, Canada and Denmark to recognize and respect the inalienable nature of Inuit subsistence activities.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-22

RESOLUTION REGARDING OIL SPILLS RESPONSE STANDARDS AND TECHNOLOGY IN THE CIRCUMPOLAR REGION.

WHEREAS, oil spills are hazardous to the circumpolar environment including the marine environment, the land environment and the ice environment; and

WHEREAS, there is non-existent or inadequate oil spill response standards for the oil and gas exploration and exploitation in the circumpolar region; and

WHEREAS, Inuit must participate in the establishment of any national or international Arctic or sub-arctic oil spill response standards and in the assessment of any oil spill technology for these regions; and

WHEREAS, Arctic and sub-arctic oil spill response standards will constitute important parts of national or international circumpolar policy;

THEREFORE BE IT RESOLVED THAT the Third General Assembly of the Inuit Circumpolar Conference calls upon the governments of the United States, Canada, and Greenland/Denmark, to join with the appropriate Committee of the Inuit Circumpolar Conference to develop specific standards for Arctic and sub-arctic oil spill response standards and methods, including both adequate technology and logistics of oil spill recovery, and standards for adequate industrial demonstration of oil spill preparedness, the whole necessary before any exploration or exploitation can be allowed in the circumpolar region.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-23

RESOLUTION REGARDING ALTERNATIVE ENERGY SYSTEMS FOR INUIT COMMUNITIES.

WHEREAS, the secure supply of electrical service and heating systems is essential to the survival of Inuit communities; and

WHEREAS, the oil-based heating and diesel generators prevalent in the arctic cost generally five to ten times more to operate than southern electrical utilities; and

WHEREAS, there exists various technological options for increasing energy efficiency and energy security in electrical service and heating supply for Inuit communities; and

WHEREAS, alternative energy options and technologies for the arctic involve environmental and social impacts; and

WHEREAS, there are numerous national, regional and local governments and agencies involved in energy planning and management for Inuit communities; and

WHEREAS, there exist little coordination in comprehensive energy planning and energy management on the circumpolar, national, regional or local levels; and

WHEREAS, Inuit participation in circumpolar, national and regional energy planning and management is desired in terms of the choice of alternative energy systems, environmental impact, training, and job creation; and

WHEREAS, there exists various governmental programs on the international, national and regional levels for the development of energy conservation, alternative energy systems, and related technology transfer; and

WHEREAS, the ICC has a resolution at the present-Assembly rejecting the use of nuclear and nuclear-related energy technologies for the circumpolar region;

THEREFORE BE IT RESOLVED THAT the Inuit Circumpolar Conference form an Energy Committee to oversee the development of energy conservation, alternative energy systems, and related technology transfer in the Inuit communities; and

BE IT FURTHER RESOLVED THAT the ICC Energy Committee will approach international, national and regional governments and agencies to develop and fund a comprehensive technology transfer program in energy conservation and alternative energy development which necessarily includes access to and transfer of related information and training for the Inuit; and

BE IT FURTHER RESOLVED THAT the ICC Energy Committee will study the establishment of an Inuit energy fund to finance the development of appropriate technology in energy conservation and alternative energy development.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-24

RESOLUTION ADDRESSING THE CONTRACT SCHOOLS MANAGED BY TRIBAL GOVERNMENTS IN THE AVCP-CALISTA REGION IN ALASKA.

WHEREAS, the Inuit Circumpolar Conference is the international organization representing the interests of Inuit of Alaska, Canada and Greenland in international affairs; and

WHEREAS, education of Inuit youth, through curricula, education program management and development, and education administration under control of Inuit communities is a priority objective of the ICC; and

WHEREAS, such Inuit controlled and administered education is presently provided in Alaska through the P.L. 93-638 "Self-Determination Act" contract schools managed by several Inuit community tribal governments in the AVCP-Calista region of Alaska, with such education systems operated by Inuit and funded through the U.S. Federal Bureau of Indian Affairs (BIA) education budget; and

WHEREAS, the contract schools in Alaska are the only Inuit tribally-operated education systems in the United States; and

WHEREAS, the U.S. Government has proposed to terminate federal support for the Inuit-operated contract schools by the end of U.S. Federal fiscal year 1984, concluding on September 30, 1984; and

WHEREAS, the Inuit communities presently operating such contract schools wish to continue to exercise control over the education system and continue to directly operate the schools themselves;

THEREFORE BE IT RESOLVED THAT the 1983 General Assembly of the Inuit Circumpolar Conference, meeting in regular session at Frobisher Bay, NWT, Canada, hereby endorses the wishes of the Alaskan Inuit to exercise self-determination in the manner in which they choose to educate their Inuit youth through continuation of Inuit controlled and operated contract schools; and

BE IT FURTHER RESOLVED THAT the 1983 ICC General Assembly hereby requests the Congress of the United States, and the U.S. Department of the Interior to continue to provide federal support and funds for the Alaska Inuit P. L. 93-638 contract schools for as long as the Inuit of Alaska may choose to manage their own education systems; and

BE IT FURTHER RESOLVED THAT the 1983 ICC General Assembly hereby requests the Governor and Legislature of the State of Alaska to provide such state support and funds as may be necessary to operate the Inuit community contract schools, should federal funds be further reduced.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-26

RESOLUTION REGARDING INUIT EMPLOYMENT PROBLEMS IN THE CIRCUMPOLAR REGIONS.

WHEREAS, substantial development of natural resources occurs within the circumpolar region without adequate Inuit participation in either decision-making or economic benefits of such development including employment opportunities; and

WHEREAS, there are serious discrepancies in working conditions and salary levels between Inuit and non-Inuit in the circumpolar region; and

WHEREAS, formal job and trade certification requirements often preclude Inuit from many of the better jobs even though such Inuit have the required skills for such jobs and trades; and

WHEREAS, there currently exists within each of the Nation-States of the circumpolar region employment practices which have the effect of denying equal and adequate employment opportunities and salaries to Inuit in the circumpolar region;

THEREFORE BE IT RESOLVED THAT the Inuit Circumpolar Conference take the necessary steps in conjunction with existing Inuit organizations within Alaska, Canada and Greenland to protect and promote the rights and interests of Inuit workers in the circumpolar region. Such steps may include the formation or strengthening of independent Inuit labor organizations; the development of special affirmative-action programs for Inuit to increase and ensure adequate Inuit employment opportunities in the circumpolar region; and the development of adequate and fair pay-scales and other working conditions for all workers of the circumpolar region.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-27

RESOLUTION REGARDING THE WILDLIFE AGREEMENT IN PRINCIPLE OF INUIT OF NUNAVUT.

WHEREAS, a just settlement of land claims is seen as a priority by Inuit of Canada; and

WHEREAS, the Inuit of Nunavut, presently represented by the Tungavik Federation of Nunavut, have negotiated a Wildlife Agreement in Principle, which is an important component of the Land Claims Settlement; and

WHEREAS, on the 27th of October, 1981, this Wildlife Agreement has been initiated by the Government of Canada and the Inuit, and has been ratified by the Inuit in it's entirety in December 1981; and

WHEREAS, the Government of Canada has up till this present day been negligent, and has not ratified this Wildlife Agreement; and

WHEREAS, the further refusal by the Government of Canada to ratify this agreement could raise grave doubts by the Inuit of Canada about the Government's seriousness to keep its commitments in the future;

THEREFORE BE IT RESOLVED THAT the Inuit of Alaska, Canada and Greenland assembled in the Third Inuit Circumpolar Conference in Frobisher Bay, NWT, Canada, urge the Government of Canada to keep its agreements and to ratify the Wildlife provisions of the Agreement in Principle with the Inuit of Nunavut, and to make an announcement to this intent.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION 83-28

RESOLUTION CALLING UPON THE CONGRESS OF THE UNITED STATES TO INSURE INUIT PARTICIPATION IN THE FORMULATION OF AMERICAN ARCTIC SCIENCE AND RESEARCH POLICY.

WHEREAS, the Congress of the United States is considering legislation to establish national Arctic science and research policy; and

WHEREAS, the House Sub-Committee on Science, Research and Technology of the United States House Science and Technology Committee has specifically left open the record of Hearings on H.R. 2292, the Arctic Science and Policy bill in order to receive all Inuit Circumpolar Conference Arctic Policy recommendations; and

WHEREAS, the bill as now written neglects the Arctic expertise of the indigenous Arctic people, fails to stress the immediate and critical environmental threats to the Arctic, ignores the role and political integrity of Arctic local governments; and

WHEREAS, the bill has other serious oversights, namely:

- there is no specific language to ensure that the Naval Arctic Research Laboratory will survive
- the language of the bill does not specifically direct formation of a national Arctic policy
- the bill recognizes only the natural sciences. It does not consider social science aspects of the Arctic, or the effects of physical changes upon Arctic society. No meaningful, useful Arctic science policy is possible when only a portion of the science spectrum is considered; and

WHEREAS, the proposed legislation is the first national Arctic policy legislation to be considered in the United States Congress; and

WHEREAS, it is essential for all national and international policy formulation affecting the circumpolar region to closely involve the Inuit community of the Arctic.

THEREFORE BE IT RESOLVED THAT the Third General Assembly of the Inuit Circumpolar Conference calls upon the Congress of the United States to ensure any Arctic Science and Research policy legislation contains adequate provision for the full and meaningful participation of Alaska Inuit in United States Arctic science, research, and policy formulation;

BE IT FURTHER RESOLVED THAT the Third General Assembly of the Inuit Circumpolar Conference extends its sincere appreciation to the House Sub-Committee on Science, Research and Technology of the U.S. House Science and Technology Committee for leaving the record of hearings on H.R. 2292 open in order to receive the recommendations of the ICC General Assembly.

INTRODUCED THIS 31st DAY OF JULY, 1983.

ADOPTED THIS 31st DAY OF JULY, 1983.

Draft Proposed Amendments
for 1983 General Assembly
june 15, 1983

INUIT CIRCUMPOLAR CONFERENCE CHARTER

1980

NUUK, GREENLAND

NOTE: Proposed amendments (underscored) were approved and adopted at the 1983 ICC General Assembly, July 31, 1983.

CHARTER

INUIT CIRCUMPOLAR CONFERENCE

PREABLE

RECOGNIZING

That we, the Inuit, are an indigenous people, with a unique ancestry, culture and homeland;

That the world,s arctic and sub-arctic areas which we use and cocupy transcend political boundaries;

That due to our historical inheritance and use and occupancy of our homeland we enjoy cultural rights unique to indigenous peoples and share common traditions, values and concerns;

That the Inuit homeland and its resources are of critical importance to the international community;

That renewable and non-renewable resources of the Inuit homeland are essential to the present state and future development of Inuit economies and cultural identity;

That international and national policies and practices should give due consideration to protection fo the arctic and subartic environment and to the preservation and evolution of Inuit culture and societies;

That our right to self-determination must be confirmed and Inuit participation in policies and artivites affecting our homeland assured;

That in furtherance of our spirit of cooperation with the international community, we seek to promote world peace and the objectives of this Charter;

That an international organization of Inuit, known as the INUIT CIRCUMPOLAR CONFERENCE dedicated to protect and advance Inuit rights and interest on the international level, has been created by a resolution unanimously adopted on June 15, 1977 in Barrow, Alaska;

THEREFORE:

A FORMAL CHARTER FOR THE INUIT CIRCUMPOLAR CONFERENCE IS NECESSARY IN ORDER TO CONTINUE THE ENDEAVOURS INITIATED BY THE CONFERENCE AND TO IMPLEMENT ITS RESOLUTIONS AND WE, THE INUIT OF THE CIRCUMPOLAR REGION, IN ACCORDANCE WITH THE PRINCIPLES OF EZUALITY, FRIENDSHIP AND RESPECT, HEREBY ACCEPT AND AGREE TO THIS CHARTER' THE PROVISIONS OF WHICH ARE SET FORTH BELOW.

DEFINITIONS

1. "Aboriginal rights and interests" mean those collective and individual rights and interests which are unique to indigenous peoples.
2. "Circumpolar region" means the Inuit homeland.
3. "Inuit" mean indigenous members of the Inuit homeland, recognized by Inuit as being members of their people, and include such regional groups as Inupiat, Yupik (Alaska), Inuit, Inuvialuit (Canada), and Kalaallit (Greenland).
4. "inuit homeland" meas those arctic and sub-arctic areas where, presently or traditionally, Inuit have aboriginal rights and interests.
5. "Member Party" or "Member" means, collectively, Inuit of a member state of the Inuit circumpolar conference.
6. "Regional Organizations" meas the Inuit regional organizations of the Member Parties.

ARTICLE 1 OFFICIAL NAME

The official name of the Conference shall be:

(a) ______________________________________

(b) "Inuit Circumpolar Conference", in english.

ARTICLE 2 PURPOSES

The Purposes of the Conference are:

(a) to strengthen unity among the Inuit of the circumpolar region;

(b) to promote Inuit rights and interests on the international level;

(c) to ensure delete ~~adequate~~ Inuit participation in political, economic and social institutions which we, the Inuit, deem relevant;

(d) to promote greater self-sufficiency of Inuit in the circumpolar region;

(e) to ensure the endurance and the growth of Inuit culture and societies for both present and future generations;

(f) to promote long-tern management and protection of arctic and sub-arctic wildlife, environment and biological productivity;

(g) to promote wise management and use of non-renewable resources in the circumpolar region and incorporating such resources in the present and future delvelopment of Inuit economies, taking into account other Inuit interests.

ARTICLE 3 FUNCTIONS AND POWERS

The Conference shall have the following functions and powers to carry out the Purposes and principles declared in the Charter:

(a) to establish policies, principles and positions in matters affecting Inuit and the circumpolar region, in accordance with resolutions duly passed for such purposes;

(b) to further exchange information among Member Parties and to disseminate information to the international community;

(c) to support actions for political, economic and social justice for Inuit;

(d) to participate in, or make representations to, international organizations concernes with matters affecting Inuit interests;

(e) to undertake appropriate action, where necessary, in accordance with resolutions duly passed for such purposes;

(f) to undertake and assist research in areas of interest to Inuit;

(g) to recommend measures to be taken to further inuit common interests;

(h) to otherwise act so as to carry out the purposes of this Charter.

ARTICLE 4 MEMBERSHIP

1. Initial Membership

The initial Members of the Conference chall be the Inuit of those states, namely Unites States (Alaska), Denmark (Greenland) and Canada, who founded and participated in the first Inuit circumpolar Conference held at Barrow, Alaska, in June, 1977.

2. Subsequent Membership

Membership in the Conference is open to all Inuit who accept the obligations contained in the present Charter and, in the judgement of the conference, are able end willing to carry out these obligations.

3. Observer Status

Observer status may be permitted non-Members at the approval of the Executive Council.

ARTICLE 5 ORGANIZATIONS

Thre are established as the principal organizations of the Conference, a General Assembly, an Executive Council, and a Secretariat. Additional organizations may be established from time to time by the General Assembly.

ARTICLE 6 GENERAL ASSEMBLY

1. Composition

The General Assembly shall consist of all recognized delegates to the Conference at a meeting duly called and convened.

2. Delegates

There shall be in the General Assembly an equal number of Inuit delegates from each Member Party to this Charter. The proposed delgates shall be subject to the procedure provided for in the by-laws. Initially, there shall be eighteen delegates from each Member Party, which number shall include the Executive Council members of the respective Member parties and the President as the case may be, unless a different number is established by the General Assembly.

3. Powers

The General Assembly:

(a) Discuss any matter within the scope of the Conference;

(b) Shall determine policy of the Conference and shall exercise the other powers conferred upon it by this Charter and the by-laws;

(c) shall elect members of the Executive Council. The delegation of each Member Party shall elect its own two members to the Executive Council.

(d) Shall elect its President of each regular General Assembly. Election of a President shall require a two-thirds majority vote of each Member Party;

(e) shall have the powers necessary to conduct its business, including the power to receive and expend funds and to consider and adopt the budget of the conference.

4. Voting

Each delegate shall have one vote in the General Assembly. Decisions shall be made by a two-thirds majority vote of each Member delegation. A majority shall be a majority of the delgates present and voting. Voting by proxy is prohibited.

5. Quorum

A quorum of the General Assembly shall consist of two-thirds of the delegates of each Member. No action of the General Assembly may take place without a quorum.

6. Meetings

The General Assembly shall meet in regular sessions at such intervals as determined by the General Assembly and in special sessions at such intervals as may be determined by the Executive Council.

ARTICLE 7 EXECUTIVE COUNCIL

1. Composition
   The Executive Council shall consist of the President of the General Assembly and sic executive members selected by the Member Parties in Accordance with paragraph 3 (c) of Article 6.

2. Vice-President
   The six executive members shall select from among themselves three vice-presidents, one from each of the respective Member Parties' executive members.

3. Powers
   The functions and powers of the executive Council shall be defined by the General Assembly and re contained in the by-laws to this Charter. The functions and powers of the vice-presidents shall be defined by the President and are contained in the by-laws to this Charter.

4. Voting
   Each executive member shall have one vote. Decisions of the Executive Council shall require a unanimous vote.

5. Quorum
   A quorum of the Executive Council shall consist of four executive members physically present; one

executive member from each of the Member Parties and the President.

6. Delegation membership
Executive Council members once elected shall automatically become delegates to, and form part of, their respective Member Party delegations at the next General Assembly.

7. Meetins
The Executive Council shall be so organized as to be able to function continously and shall hold at least two regular meetings each year. Special meetings may be called by the President at amy time.

ARTICLE 8 SECRETARIAT

1. The Executive Co-ncil shall establish a Secratariat to carry out the administrative and program functions of the conference.

2. The staff of the Secratariat shall be appointed by the President under criteria established by the General Assembly.

3. The Secratariat shall be located in a place to be determined by the President.

ARTICLE 9 BUDGET AND CONTRIBUTIONS

1. The Executive Council shall prepare and review a budget for the Inuit Circumpolar Conference annually.

2. Each Member Party undertakes to contribute to the Conference an equal share of the budget as apportioned by the Executive Council.

3. Each Member Party shall pay as its first contribution a proportion, to be determined by the Executive Council, of the budget for the current financial period.

4. The financial period of the Conference shall be the period between regular sessions of the General Assembly of the Conference, unless the General Assembly should otherwise determine.

5. Decisions by the General Assembly on the level of the budget shall require a two-thirds majority vote by each Member delegation.

ARTICLE 1o BY-LAWS

1. Adoption

The General Assembly shall adop by-laws to implement and make more specific the provisions of this Charter. All by-laws must be consistent with the Articles of this Charter.

2. Amendment

Amendments to the by-laws require a two-thirds majority vote of each Member delegation to the General Assembly.

ARTICLE 11 AMENDMENTS

1. Amendments to the present Charter shall become effective for all Member Parties when the have been adopted by a vote of the Executive council with all executive members physically present and voting and by a unanimous vote at the General Assembly.
2. The President, any Executive council representative and any delegate to the General Assembly through its respective Executive Council representative may propose an amendment to the Charter or its by-laws.

ARTICLE 12 RATIFICATION

This Charter shall be ratified by July 1, 1982 by the Member parties in accordance with their respctive procedures which procedures shall be subject to certain minimum standards to be set forth by the Executive Council. This Charter shall come into force after ratification and when signed by all the initial Member Parties.

HANS [illegible]
P. O. Box [illegible]
DK-3900 NUUK
Greenland

INUIT CIRCUMPOLAR CONFERENCE

INTERIM BY-LAWS

EC80-1

NOTE: 1983 General Assembly amendments have been added to this copy by hand an in pen. Each of them were approved and adopted at the 1983 ICC General Assembly, July 31, 1983.

November 15, 1980
(as amended) September 11, 1981
(as amended) June 12, 1983.

I. MEMBERSHIP

1. Admission to Membership:

The admission of any subsequent Member to the Conference will be effected by a decision of the General Assembly upon the recommendation of the Executive Council.

2. Privileges of Membership:

A member of the Conference shall act in accordance with the purposes and principles of the Charter and shall be entitled to:

no change

a) Participate through its chosen delegates in the Conference and its ([illegible]) organs; and

b) Cast votes on any matter within the purposes, functions and powers of the Conference.

3. Suspension and explusion of delegates and representatives:

A delegate or Executive Council representative of the Conference that has violated the purposes and principles contained in the present Charter may, after an adequate hearing, be suspended or expelled from the Conference by the delegates of its own Member party in writing, a copy of which writing must be deposited with the President.

Failing action by the member party to so discipline its delegates or Executive Council representatives, such delegates or Executive Council representatives may be suspended or expelled from the Conference by the General Assembly, after an adequate hearing, and on giving one (1) month's notice to the relevant member party and the delegate or Executive Council representative guilty of violating the purposes and principles of the present Charter.

4. Use of name of Conference by members:

No Member may, directly or indirectly use the name of the Inuit Circumpolar Conference for its private affairs, personal profit, commercial enterprise or religious purposes, or act as a representative of the Conference unless the Member is duly authorized to do so in writing by the Executive Council and solely in accordance with the terms and conditions of such authorization.

5. Regional Organizations:

a) Nothing in this Charter or its by-laws shall be interpreted as precluding the existence of regional organizations, bodies or groups within each Member.

b) Regional organizations, in the case of Canada and Alaska, and national organizations, in the case of Greenland, may disassociate themselves from particular courses of action taken by the Conference should they so desire.

6. Withdrawal of Membership:

a) A Member party may withdraw from the Conference for valid reasons and after approval in writing by a majority of the regional organizations of that Member party, approval of the Executive Council and approval of the General Assembly.

b) Withdrawal of an initial Member party from Membership in the Conference constitutes dissolution of the Conference and abolishment of the Charter and its by-laws.

c) Decision by a Member party to withdraw from the Conference shall be ratified by the Member parties in accordance with their respective procedures. Withdrawal shall only become effective after ratification and when signed by all Member parties.

II. GENERAL ASSEMBLY

1. Delegates:

a) All delegates must be Inuit.

b) Delegates shall be selected by each Member party according to the rules established respectively by each Member party and in accordance with the Charter and its by-laws. Each Member party may select sixteen delegates except for the Member party from which the President is elected which may select fifteen delegates.

c) Each Member's respective delegation should reflect, to the extent possible, a cross-section of its regional organizations.

d) No delegate may represent more than one Member party.

e) Delegates to a conference shall retain their status as delegates until new delegates have been selected for a new regular general assembly and accepted by the credentials committee in accordance with the procedure in By-Law VI.

2. Powers:

The General Assembly:

a) Shall take decisions on any matter specifically referred to it for this purpose by the Executive Council and shall propose matters for consideration by the Executive Council and may request from the Executive Council reports on any matter relating to the purposes of the Conference;

b) Shall adopt rules of procedure and financial regulation for the Conference;

c) May make recommendations to regional organizations or to Members or to other international organizations or bodies, regarding any matter pertaining to the purposes of the Conference;

d) Shall direct the making of reports or studies for internal use of the Conference or for submission to other international organizations or bodies;

e) Shall consider and direct any affiliation of the Conference with other international organizations or bodies.

f) Shall rule on applications for membership to the Conference.

g) May suspend or expel a delegate or Executive Council representative to the Conference in accordance with the procedure in by-law I (3).

h) May do all other things as are incidental to carrying out the powers of the General Assembly.

3. Meetings:

The General Assembly shall meet in regular session once every three years or at such other intervals as may be determined by the General Assembly or the Executive Council.

a) Special General Assemblies may be called by the Executive Council.

b) Meetings of both regular and special General Assemblies shall be open to the public unless otherwise decided by the Executive Council prior to such meetings or by vote of the General Assembly during such meetings.

4. The President:

a) The General Assembly shall ∧ by two-thirds majority vote of each Member delegation, elect a President.

b) The term of office of the President shall be for three years or at such intervals as may be determined by the General Assembly;

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c) A President shall be ineligible to serve as President for more than two consecutive terms of office;

d) The election of the President shall be an item of the agenda of new business at each regular session of the General Assembly;

e) In the event of death or resignation of the President or in the event of the inability of the President to perform his or her duties over a period of time, the Executive Council shall elect from the Executive Council an acting President to hold office until the next General Assembly in addition to his or her other Executive Council functions;

f) The President shall preside at the opening of each regular session of the General Assembly until the Assembly has elected a new President.

g) In accordance with by-law IV (5) of the present by-laws, the President shall decide or approve expenditures of Conference funds;

h) Subject to by-law III (1) (a) of the present by-laws, the President shall determine and assign certain administrative [illegible] responsibilities of the three Vice-Presidents selected by the Executive Council pursuant to Article 7(2) of the Charter.

i) Nominations for candidates for President shall be endorsed by at least three (3) delegates to the Conference; and

j) Election of the President shall be by secret ballot. *The candidates, [illegible] are more than receiving the least number of votes shall be dropped, from the voting in the event that no candidate receives the necessary two-thirds majority of each Member delegation.

* If there are more than two candidates, the candidate receiving the least number of votes shall be dropped from the voting in the event that no candidate receives the necessary two-thirds majority of each Member delegation. Providing that there shall be no less than two candidates.

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[illegible]

5. Location of Sessions:

The location of regular sessions of the General Assembly shall alternate among the Member states.

6. Written Minutes:

There shall be written minutes kept summarizing regular and special sessions of the General Assembly.

7. Record of Resolutions:

A record of resolutions adopted by the General Assembly shall be maintained in addition to written minutes summarizing the session of the General Assembly.

8. Notice of Meetings:

Written notice of not less than 90 days for regular sessions and not less than 30 days for special sessions of the General Assembly shall be provided to all delegates and Executive Council representatives. Such notice shall contain a provisional agenda for such session.

9. Conduct of Business:

a) The President shall declare the opening and the closing of sessions of the General Assembly. He or she shall direct the discussion and ensure observance of the rules of procedures of the General Assembly, accord the right to speak, put questions to the vote and announce decisions resulting from the voting.

b) Proposals and amendments to proposals shall normally be introduced in writing and handed to the Secretariat which shall circulate copies to delegates of the General Assembly. As a general rule, no proposal shall be discussed or put to the vote at any Meeting of the Assembly unless copies of it have been circulated to delegates. The President may, however, permit the discussion and consideration of amendments or of motions as to procedure even though these amendments and motions have not been circulated.

c) The General Assembly may on the proposal of the President or the Chairperson limit the time to be allowed to each speaker on any particular subject under discussion.

d) During the discussions of any matter a delegate may rise to a point of order and the point of order shall be decided immediately by the President, in accordance with these rules of procedure. A delegate may appeal against the ruling of the President. The appeal shall be put to a vote immediately and the President's ruling shall stand unless overruled by a majority of the members present and voting. A delegate rising to a delete

point of order may ~~not~~ speak on the substance of the matter under discussion.

e) Subject to the above rule, the following motions shall have precedence, in the order indicated below, over all other proposals or motions before the meeting:

  i) to suspend a meeting,
  ii) to adjourn a meeting,
  iii) to adjourn the debate on the question under discussion, and
  iv) for the closure of the debate on the question under discussion.

Permission to speak on a motion falling within (i) to (iv) above shall be granted only to the proposer and in addition to one speaker in favour of and two against the motion, after which it shall be put immediately to the vote, unless the General Assembly determines otherwise.

f) If two or more proposals relate to the same question, the General Assembly, unless it decides otherwise, shall vote on the proposals in the order in which they have been submitted.

g) Parts of a proposal or amendment thereto shall be voted on separately if the President, with the consent of the proposer, so decides, or if any delegate requests that the proposal or amendment thereto be divided and the proposer raises no objection. If objection is raised, permission to speak on the point shall be given first to the mover of the motion to divide the proposal or amendment, and then to the mover of the original proposal or amendment under discussion, after which the motion to divide the proposal or amendment shall be put immediately to the vote.

h) Those parts of a proposal which have been approved shall then be put to the vote as a whole; if all the operative parts of the proposal or amendment shall be considered to be rejected as a whole.

i) A motion is considered to be an amendment to a proposal if it merely adds to, deletes from or revises part of that proposal. An amendment shall be voted on before the proposal to which it relates is put to the vote, and if the amendment is adopted, the amended proposal shall then be voted on.

j) If two or more amendments are moved to a proposal, the General Assembly shall first vote on the amendment furthest removed in substance from the original proposal and then on the amendment next furthest removed therefrom and so on until all amendments have been out to the vote. The President or the Chairperson shall determine the order of voting on the amendments under this rule.

k) A Motion may be withdrawn by its proposer with the consent of the second at any time before voting on it has begun, provided that the motion has not been amended or that an amendment to it is not under discussion. A motion withdrawn may be re-introduced.

l) When a proposal has been adopted or rejected, it may not be reconsidered at the same session of the General Assembly unless the Assembly decides by simple majority in favour of reconsideration. Permission to speak on a motion to reconsider shall be accorded only to the mover and one other supporter and to two speakers opposing the motion, after which it shall be put immediately to the vote, unless the General Assembly determines otherwise.

10. Voting in General Assembly

a) Voting in the General Assembly may be by a show of hands, roll call or secret ballot. The General Assembly shall normally vote by a show of hands. In the case of a secret ballot, ballots shall be retained by the Secretariat for a period of three months from the date of the secret ballot after which time such ballot shall be destroyed;

b) All elections shall be decided by secret ballot;

c) Any other matter shall be decided by secret ballot if the General Assembly or Executive Council so determines.

d) In a secret ballot ~~two~~ three scrutineers one from each member party shall, on the proposal of the President, be appointed by the Assembly from the delegations present and shall proceed to scrutinize the votes cast. All invalid votes cast shall be reported to the Assembly;

e) For a vote by secret ballot, the vote shall be supervised in such a manner as to ensure complete secrecy of the ballot. Voting booths may be used if necessary;

f) Once voting has commenced, no delegate may interrupt the voting except to rise to a point of order in connection with the voting.

g) Any delegate may challenge the result of a vote or election.

  i) In the case of a vote be show of hands or roll call, the vote, should the result be challenged, the President shall cause a second vote to be taken forthwith;

  ii) A vote by show of hands or by roll call may be challenged only immediately after the result has been announced.

  iii) A secret ballot may be challenged by a delegate or Executive Council representative at any time within three months of the date upon which it took place by indicating in writing to the Executive Council the election being challenged and the reasons for such challenge.

  iv) Should a vote or election by secret ballot be challenged, the President shall cause the ballot papers and all relevant record sheets to be re-examined and shall circulate the result of the investigation, together with the original complaint, to all delegates and the Executive Council representatives.

III. EXECUTIVE COUNCIL

1. Powers:

a) The functions and powers of the Executive Council shall be defined by the General Assembly. In any situation arising, wherein no direction has been received from the General Assembly and where an immediate response is necessary, the Executive Council shall act in accordance with the purposes and principles set out in the Charter;

b) The Executive Council shall seek funding for the Conference. It may solicit and receive donations, grants and other gratuitous financial assistance from both public and private sectors to support activities, operations and capital expenditures of the Conference. It may also secure loans for such purposes if such loans have been included in the budget which has been no change

duly approved by the Executive Council ;

c) The Executive Council shall, from time to time, designate the chartered bank or banks, in which moneys of the Conference are to be held and the currency which shall be used;

d) The Executive Council shall make all necessary arrangements to consult the representatives of international organizations or qualified persons concerned with questions within its competence;

e) The Executive Council may establish such intervals for regular sessions of the General Assembly other than the three year interval;

f) Any Executive Council representative unable to attend a meeting of the Executive Council shall give adequate prior notice of such to the President andy may appoint an alternate person who must be an adult Inuit to act in his or her stead for a particular Executive Council meeting.

2. Meetings:

a) The Executive Council may hold meetings at such places which, in its judgement, will best facilitate its work.

b) Subject to decisions of the General Assembly, the Executive Council shall adopt its own rules of procedure;

c) The Executive Council shall hold at least two regular meetings each year.

d) The Executive Council shall meet in regular session at such time and at such place as the Executive Council may declare taking into account the need to hold a meeting immediately after a regular session of the General Assembly in order to take any action of an urgent nature arising out of decisions of the Assembly.

e) The President may call special meetings of the Executive Council at any time.

f) The President shall call a meeting of the Executive Council whenever requested in writing to do so by at least three members of the Executive Council.

3. Reports

The Executive Council shall submit a written annual report of its activities to each of the member parties.

4. Notice of Meetings:

a) Notice of the time and place for holding any meeting of the Executive Council shall be given by telex, telegram or registered mail, not less than ten (10) days before the date of such meeting, provided that immediately following a regular session of the General Assembly a meeting of the newly elected representatives of the Executive Council may be held without the full 10 days notice to each new Executive Council representative. This shall be the case where notice of the intended meeting of the newly elected Executive Council is given to the General Assembly along with the notice of the regular meeting of the General Assembly.

b) A meeting of the Executive Council may be held without prior notice when all representatives of the Executive Council are present.

c) No error or omission in giving notice of any meeting of the Executive Council shall invalidate such meeting or make void any proceedings taken thereat when all representatives of the Executive Council are present at said meeting.

d) Any representative on the Executive Council may at any time either before or after the meeting, waive notice of any such meeting and may ratify and approve any or all proceedings taken at the meeting.

5. Election of the Executive Council representatives:

The delegation of each Member Party shall elect its representatives to the Executive Council every regular session of the General Assembly.

6. Vice-Presidents:

The Executive Council shall select its Vice-Presidents every regular session of the General Assembly. The powers of the Vice-Presidents shall include the following: administration and supervision of the respective Member party office; on instruction of the President, the establishment and maintenance of the Conference presence in the respective Member party states.

IV. THE SECRETARIAT

1. Keeping of Minutes

a) The Secretariat shall collect, receive, translate into the working languages of the Conference and maintain on file minutes summarizing the meetings of the General Assembly, Executive Council and commissions, committees and working groups of the Conference.

b) The Secretariat shall, prior to the next meeting of the Executive Council forward a copy of the minutes of the last Executive Council meeting to each representative on the Executive Council.

c) The Secretariat shall, adequately prior to the next meeting of commissions, committees or working groups of the Conference forward copies of relevant minutes of such bodies to each representative of the relevant body.

2. Sending of Documentation:

The Secretariat shall, at least six (6) weeks before the date of a regular or special meeting of the General Assembly, forward to all delegates and Executive Council representatives the documentation relating to items of the provisional agenda, in the working languages of the Conference in accordance with by-law V.

In the case of special meetings of the General Assembly, the present provision shall be applied with due regard to administrative feasibility.

3. Record of Resolutions:

The Secretariat shall maintain a record of resolutions adopted by the General Assembly and the Executive Council.

4. Arrangements for Meetings:

The Secretariat shall be responsible for the arrangements for meetings of the General Assembly, Executive Council and any commissions, committees and working groups of the Conference and for the preparation of reports, documents, studies and other materials of the General Assembly, Executive Councils and any commissions, committees and working groups of the Conference.

5. Approval of Expenditures of Conference Funds:

The President and the Secretariat shall jointly make expenditure decisions with respect to Conference funds. The Secretariat will retain a Treasurer or accountant for the approval, where required, and administration of these expenditure decisions.

Such expenditure decisions shall be based upon the budget approved by the Executive Council, the financial regulations adopted by the General Assembly, and the purpose and objects of the Charter and its by-laws.

In addition, individual expenditures of Conference funds in excess of $10,000 American or $12,000 Canadian or 80,000 Dkr must receive prior authorization of the Executive Council.

6. Signing Officers:

There shall be three signing officers. The President shall be one of the signing officers. The signatures of any two of the three signing officers shall be required on any one instrument.

7. Notice of Meetings:

The Secretariat shall be responsible for issuing notices of meetings of the General Assembly, Executive Council and any commissions, committees and working groups of the Conference.

8. Keeping of Register:

The Secretariat shall keep a register containing names, addresses and telephone numbers of all delegates, Executive Council representatives, members of any commissions, committees and working groups of the Conference and any consultants and employees of the Conference.

9. Moneys:

a) The Secretariat shall deposit all moneys as and when received to the credit of the Conference in such chartered bank or banks, as designated by the Executive Council; and

b) The Secretariat shall cause to be collected all moneys owing to the Conference by Members.

10. Preparation of Annual Budget and Reports for Executive Council:

The Secretariat shall prepare an annual budget for the consideration of the Executive Council, prepare an annual statement of revenue and expenditure and balance sheet together with such exhibits and reports as may be necessary and also prepare such interim statements, financial and otherwise, as the Executive Council may from time to time require.

11. Custodian:

The Secretariat shall be the custodian of all books and documents belonging to the Conference.

V. LANGUAGES

1. The official language of the Conference is the Inuit language. The working languages of the Conference are English and the Inuit language.

2. Interpretation shall be given from and into the official language as necessary.

3. Agenda and all supporting documents to agenda items of the General Assembly and commissions, committees and working groups of the Conference shall be issued in one or more of the working languages.

4. All reports, resolutions, recommendations, decisions and minutes of the General Assembly and of commissions, committees and working groups of the Conference shall be drawn up in one or several of the working languages of the Conference.

VI. DELEGATIONS AND CREDENTIALS

1. For the purpose of these by-laws the term "delegation" means all the persons appointed or elected by a Member party to attend a session of the Conference.

2. There shall be a Credentials Committee of the Conference consisting of the President and one Executive Council representative from each of the Member parties. In the case of the Credentials Committee having to question the credentials of an Executive Council representative with membership on the Credentials Committee, the other Executive Council representative for that Member party shall sit in his or her stead on the Credentials Committee. In the case where the Credentials Committee has to question the Credentials of both Executive Council representatives from one Member party, a delegate from such Member party shall sit in their stead on the Credentials Committee.

3. The Credentials Committee shall examine the credentials deposited in accordance with paragraph 5 and report promptly thereon to the Member parties. The Member parties through a vote in the General Assembly shall have the final decision with respect to any questions of credentials.

4. The Credentials Committee shall establish criteria according to which the credentials of individuals shall be decided. Such criteria shall include, but not be limited to, ensuring fair regional representation of delegates of each Member party in the Conference.

5. The credentials of delegation persons shall be deposited with the President not less than 45 days before the date fixed for a regular session of the Conference, or any lesser period as determined by the President.

6. Any delegation to whose admission a Member party has made objection shall be seated provisionally with the same rights as other delegations until the Credentials Committee has reported and the General Assembly has given its decision.

7. Decisions in the Credentials Committee shall be taken by a majority of the votes cast. No representatives on this Committee including the President shall have more than one vote. Meetings of the Credentials Committee shall be held in private unless otherwise determined by the General Assembly.

VII. AGENDA

1. Regular Sessions:

a) A provisional agenda for each regular session of the General Assembly shall be drawn up by the Executive Council and sent to delegates of the General Assembly not less than 90 days before the date fixed for the session.

b) The provisional agenda for a regular session shall consist of:

i) All items the inclusion of which may have been decided upon by the General Assembly or the Executive Council at a previous session; and

ii) All items proposed for inclusion in the provisional agenda by the Executive Council representatives after consultation with their Member party's delegates, or the President; and

iii) Any items proposed for consideration in any request by at least one-third of the delegates to the General Assembly of each of the Member parties; and

iv) Applications for admission of additional Member parties to the Conference; and

v) A report by the President on the work of the Conference since the last session of the General Assembly; and
vi) Election of a new President; and
vii) Election of Executive Council representatives on regular session General Assembly agenda.

2. Special Sessions:

a) A provisional agenda for each special session of the General Assembly shall be drawn up by the Executive Council and sent to delegates of the General Assembly not less than 30 days before the date fixed for the session.

The provisional agenda for a special session shall, taking into account the reason for convening the special session, consist of:

i) All items the inclusion of which may have been decided upon by the General Assembly or the Executive Council at a previous session;
ii) All items proposed for inclusion in the provisional agenda by Executive Council representatives after consultation with their Member party's delegates or the President;

iii) Any items proposed for consideration in any request by at least one-third of the delegates to the General Assembly of each of the Member parties;

iv) The filling of any vacancies on the Executive Council;

v) Applications for admission of additional Member parties to the Conference.

3. New items:

Inclusion of new items on the Conference agenda after it has been formally adopted by the Assembly shall require approval by the Member parties by way of a vote of the General Assembly.

VIII. COMMISSION, COMMITTEES AND WORKING GROUPS

1. The General Assembly or the Executive Council may establish commissions, committees and working groups to advise on the formulation and implementation of policy and to study and report on matters pertaining to the purposes of the Conference.

2. Membership in such commissions, committees and working groups may consist of delegates to the assembly and other individuals.

3. The General Assembly or the Executive Council shall determine the terms of reference and reporting procedures, as appropriate, of commissions, committees and working groups. Such terms of reference and reporting procedures established by the Executive Council may be subsequently modified by the General Assembly.

4. Commissions, committees and working groups may be either ad hoc or permanent bodies.

IX. REMUNERATION

Unless authorized by the General Assembly, no delegate, Executive Council member, or members of commissions, committees and working groups of the Conference shall receive remuneration for his or her services. Reasonable expenses of delegates, Executive Council representatives, and members of commissions, committees and working groups for Conference responsibilities shall be borne by the Conference.

X. AUDIT OF BOOKS AND RECORDS

The books, accounts and records of the Conference as maintained by the Treasurer or accountant appointed by the President shall be audited at least once every year by a duly qualified accountant.

A complete and proper report of the standing of the books for the previous year shall be submitted by such auditor to the Executive Council on an annual basis. The President shall bring such reports before the General Assembly at regular sessions of the Assembly.

XI. INSPECTION OF BOOKS AND RECORDS

The books and records of the Conference may be inspected by any delegate of the Conference or any Executive Council representative at regular or special sessions of the Assembly or Executive Council respectively or at any time convenient to the Secretariat having control of such books and records. Each Executive Council representative shall at all times have access to such books and records.

XII. CONFIDENTIALITY

Except upon direction of the Executive Council or the President, delegates, members of commissions, committees and working groups, consultants and employees of the Conference shall treat in a confidential manner and shall not disclose or cause to be disclosed communications and documentations concerning the activities and business of the Conference.

WORK OF THE INUIT CIRCUMPOLAR CONFERENCE

Inuit Circumpolar Conference was founded as an international organization for Inuit in Alaska, Canada and Greenland in the summer of 1980 in Nuuk, Greenland.

During that time the charter of the organization was adopted, and the charter will later be finally ratified in the single member countries.

Furthermore, 30 resolutions in total were adopted and these form the basis of the organization's work today. This dossier contains all resolutions in the form they were adopted, by the 54 delegates of the Conference - 18 from each member country.

As evidenced by the work stated above the field of activity of the I.C.C. is very wide-spread and very central for the entire development in the Arctic region.

All the resolutions constitute very extensive work - which is already in active progress.

Hans-Pavia Rosing
President
August 1981

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 01-80

WHEREAS, Eben Hopson Sr., was the guiding force behind the creation of Inuit Circumpolar Conference; and

WHEREAS, Eben Hopson Sr., dedicated his life towards creation of Inuit Circumpolar Conference; and

WHEREAS, the Inuit Circumpolar Conference would not have been founded without the guidance of Eben Hopson Sr:

NOW, THEREFORE BE IT RESOLVED:

1. That the Second Inuit Circumpolar Conference Assembly recognizes Eben Hopson Sr., as the founder of Inuit Circumpolar Conference.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 02-80

WHEREAS, recognizing that we the Inuit are one people and share common origins in language and culture;

WHEREAS, the Inuit desire to strengthen their mutual identity through the use of the Inuit language, cultural exchange, the sharing of historical experiences and the adoption of educational philosophy to promote Inuit academic excellence; and

WHEREAS, the Inuit Circumpolar Conference supports the establishment of Inuit Nunaani Ilinniartulirijit (International Committee for Inuit Education, Culture and Language);

NOW, THEREFORE, BE IT RESOLVED that the International Committee of Language, Culture and Education be established as stated in Resolution I.C.C. 77-04 as part of the permanent Inuit organization with the following additional area of concern, namely to demonstrate that the environment, ecology and culture are inextricably linked;

BE IT FURTHER RESOLVED that the I.C.C. recommends the Member Parties of the I.C.C. create committees to implement these functions on a regional basis; and

BE FURTHER RESOLVED that the Inuit educational and cultural institutions be requested to facilitate the implementation thereof in the Member Party organizations; and

BE IT FURTHER RESOLVED that the Inuit language be the official language in future meetings of this Conference.

INTRODUCTED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 03-80

WHEREAS, I.C.C. supports the concern of Inuit in the circumpolar regions regarding the development and preservation of language, oral and written history and circumpolar indigenous literature; and

WHEREAS, efforts in Canada have received insufficient support from its governments in this regard;

NOW THEREFORE BE IT RESOLVED that I.C.C. collaberates with I.C.C. members in strongly urging to federal government and the Northwest Territorial government that significant support be provided for all forms of language and cultural development programmes in the schools and communities in Canada.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 04-80

WHEREAS, several circumpolar cultural and higher educational programmes are in existence, or are being planned; and

WHEREAS, there is no existing mechanism for exchange of information among these institutions and communities;

NOW THEREFORE BE IT RESOLVED that Alaska, Canada and Greenland each establish a centre for information and material dissemination; FURTHER;

AND FURTHER BE IT RESOLVED that the Inuit Cultural Institute of Canada act as a central facilitator in the collection and distribution of information on materials available for the circumpolar Inuit of Alaska, Canada and Greenland until an Inuit University is established.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 05-80

WHEREAS, throughout the elder persons' lifestyles, members of the community accumulate thousands of experiences within their respective circumpolar places so they take on a collective meaning and importance to the society as a whole; and

WHEREAS, this meaning is expanded and deepened through the existence of oral traditions and historic knowledge which record events beyond living experience but also associated with that place and surrounding area;

NOW THEREFORE BE IT RESOLVED that I.C.C. support a conference of elders from Alaska, Canada and Greenland in conjunction with its regular meetings in the future.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 06-80

NAVARIN BASIN

WHEREAS, the I.C.C. is in existence to protect and assist the Inuit in Alaska, Canada and Greenland; and

WHEREAS, the Association of Village Council Presidents represent the welfare and interest of Yupik people in the Yukon-Kuskokvim Delta in Alaska; and

WHEREAS, the Association of Village Council Presidents met in March to address the lease sale of Navarin Basin; and

WHEREAS, the Association of Village Council Presidents did pass a resolution directing the Secretary of U.S. Department of Interior to delay the lease sale; and

WHEREAS, the Secretary of U.S. Department of Interior ignored the resolution and is prepared to proceed with the sale as planned;

THEREFORE BE IT RESOLVED that I.C.C. support the position of Association of Village Council Presidents in regards to lease sale of Navarin Basin; and

BE IT FURTHER RESOLVED that I.C.C. requests the United States Government and the U.S. Department Secretary of Interior delay the lease sale of Navarin Basin as requested by Association of Village Council Presidents.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 07-80

WHEREAS, offshore drilling for oil and gas is proceeding in several areas of Canada's Arctic; and

WHEREAS, offshore drilling is proposed off the coast of Alaska; and

WHEREAS, several projects have been proposed involving the transportation of oil and gas through the circumpolar waters of the United States, Canada and Greenland;

THEREFORE, BE IT RESOLVED that the I.C.C. Members request their respective governments to devise a coordinated strategy for the prevention and clean-up of accidents involving the spilling of oil and other pollutants;

BE IT FURTHER RESOLVED that the I.C.C. Members request their respective governments to begin a coordinated programme of research and exchange of information on the impact of oil and other pollutants arising from industrial activities in the circumpolar marine environment;

BE IT FURTHER RESOLVED that information on prevention, clean-up and the interaction of pollutants with the environment held by corporations or governments be made accessible to the public.

AND BE IT FURTHER RESOLVED that the I.C.C. Members urge their respective governments to enter into an agreement on liability for expenses of clean-up operations and compensation to any party which suffers loss as a result of accidents.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 08-80

WHEREAS, the Inuit have substantial rights and interest in the offshore from centuries of marine use and occupancy;

WHEREAS, the renewable resources and their habitat in the marine environment are interdependent throughout the circumpolar region;

WHEREAS, industrial development could threaten the circumpolar marine environment;

THEREFORE BE IT RESOLVED that the I.C.C. Members work together with their respective governments to establish a coastal zone management programme based on the following:

1) Inuit have direct participation in the design and implementation of coastal zone management programmes through appropriate regional, national and international bodies;

2) The I.C.C. Members cooperate to ensure that the coastal zone management programmes of each region protect the circumpolar seas as a whole;

3) Priority is given to the protection of subsistence activities and the resources upon which these activities depend;

4) Special protection is given as required to the biological resources of the marine environment;

5) Competing uses are allowed only when they do not threaten subsistence resources, their habitat, and endangered or threatened species;

6) The burden of proof lies with the developer to demonstrate the net beneficial effects of a proposed project prior to project approval;

7) Appropriate policies and strategies be developed to minimize adverse impacts on the environment and the activities of Inuit;

...2/

AND THEREFORE BE IT FURTHER RESOLVED that the I.C.C. establish and fund a committee on CZM to coordinate and promote CZM in the circumpolar region.

INTRODUCTED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 09-80

WHEREAS, the Inuit are concerned about the impact of development on the marine environment of the circumpolar region;

WHEREAS, very little is known about the interdependence of this marine ecosystem and the impact of development upon it;

THEREFORE, BE IT RESOLVED that the members of the I.C.C. exchange information and coordinate research programmes relating to the marine environment and coastal zone management;

AND BE IT FURTHER RESOLVED that the three nations be asked to initiate, by July 1, 1981, in consultation with Inuit a joint programme of scientific research on the marine environment of the circumpolar region.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 10-80

WHEREAS, many of the resolutions from the 1977 conference have not been fully implemented;

THEREFORE BE IT RESOLVED that the President of the I.C.C. make every effort in coorperation with the Executive Council to see that the resolutions from this conference and the 1977 conference be fully implemented by the governments and organizations concerned.

AND BE IT FURTHER RESOLVED that the President of the I.C.C. report to the next General Assembly on the implementation of the resolutions of the 1977 and 1980 conferences.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERNCE

RESOLUTION SERIAL NUMBER 11-80

WHEREAS, a consortium of companies, led by Petro-Canada, is sponsoring the Arctic Pilot Project which would ship liquefied natural gas (LNG) by tanker from Melville Island, NWT through Davis Strait to a Canadian port on the east coast;

WHEREAS, adequate environmental impact studies have not been carried out;

WHEREAS, it is likely that adverse environmental and social impact will result from such projects in the offshore areas near the Northwestern coast of Greenland and the Lancaster Sound region within Canada;

WHEREAS, the Arctic Pilot Project, if implemented, will lead to the permanent establishment of a marine transportation route for other purposes including oil development, with further potential impacts on Inuit interests in Canada, Greenland and Alaska;

WHEREAS, Greenland has had no direct input in relation to the environmental impact assessment or approval process of the pilot project;

WHEREAS, Denmark shall be officially transferring jurisdiction over Greenland's offshore to Greenland on January 1, 1981;

WHEREAS, in light of such impending transfer, no prejudice should be imposed by Denmark on Greenland's offshore interests in the interim period;

WHEREAS, Greenland strongly opposes any consideration to approve the Arctic Pilot Project prior to the completion of an appropriate environmental impact assessment process with full participation by Greenland;

...2/

WHEREAS, there is no need for the Danish government to approve this project before the Canadian government does;

WHEREAS, it is contraductory for Canada to promote environmental protection of its Arctic regions in the Law of the Sea Conference and, at the same time, not fully consider Greenland's environmental concerns in its offshore area in regard to the pilot project;

THEREFORE BE IT RESOLVED:

THAT the I.C.C. make suitable representations to the governments of Denmark and Canada to refrain from approving the Arctic Pilot Project prior to the transfer of offshore jurisdiction to Greenland on January 1, 1981;

THAT no approvals should be given to the project until an adequate and public environmental impact assessment process has been completed;

THAT in this regard an international environmental impact assessment process be established to suitably provide for joint participation by the governments of Greenland, Denmark and Canada.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 12-80

WHEREAS, Greenland presently has direct representation in the International Whaling Commission; and

WHEREAS, the European Economic Community is threatening to supplant Greenland's membership in the International Whaling Commission against the expressed wishes of the Danish government;

WHEREAS, Greenland is the only country adequately representing Inuit interests in the International Whaling Commission;

NOW, THEREFORE BE IT RESOLVED:

1. That the I.C.C. supports the Danish policy of upholding the continued direct representation of Greenland in the International Whaling Commission.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 13-80

WHEREAS, subsistence whaling by Inuit is of unique cultural significance to Inuit and is clearly distinguishable from commercial whaling by non-indigenous peoples;

WHEREAS, whaling for subsistence purposes must have priority over all other whaling activities;

WHEREAS, existing information and research on whales are sorely inadequate;

WHEREAS, the International Whaling Commission is presently contemplating the possible inclusion of small cetaceans within its jurisdiction;

THEREFORE BE IT RESOLVED:

1. That the Members of the I.C.C. should collaborate in ensuring that whaling for subsistence purposes be adequately recognized;
2. That for such purposes, an Inuit Circumpolar Whaling Commission be established and funded by the I.C.C. to research subsistence whaling and to promote the protection of Inuit subsistence whaling activities, taking into account sound conservation principles;
3. That the Members of the I.C.C. collaborate in strongly opposing any attempts by the International Whaling Commission to extend its jurisdiction to include small cetaceans used predominantly by Inuit.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 14-80

WHEREAS, Inuit have aboriginal rights and interests in cetaceans, fish, marine mammals, foul and game;

WHEREAS, such living resources are essential to Inuit cultural survival and serve as a continuing vital source of food for Inuit;

WHEREAS, government research methods and procedures are often inadequate or inconclusive and have been used to adversely affect Inuit rights and interests;

WHEREAS, despite these special rights and interests of Inuit, research and policies are often carried out without adequate consultation with or participation by Inuit in such activities;

WHEREAS, such living resources are being increasingly subjected to international agreements and regulations;

NOW, THEREFORE BE IT RESOLVED:

That Inuit from each member state should seek from their respective governments direct participation in the committees or bodies within their respective countries which (a) determine government policy on the international level and which (b) undertake scientific research on which such policies may be based.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 15-80

WHEREAS, a license to fish shrimp in international waters between Greenland and Canada was granted by Canada to the Labrador Inuit Association in 1978;

WHEREAS, the fishermen of northern Labrador are in the process of forming a fisheries cooperative for such purposes;

WHEREAS, Labrador Inuit view this fishery as a vital opportunity to promote Inuit economic development;

WHEREAS, the Labrador Inuit Association is facing the loss of this license since no shrimp fishing boat has yet been acquired as required by the government of Canada;

THEREFORE, BE IT RESOLVED:

That the I.C.C. support the efforts of the Labrador Inuit Association in ensuring that the shrimp fishing license is not lost while the Association continues to organize its fishing cooperative and attempts to acquire a shrimp fishing boat.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 16-80

WHEREAS, present development patterns of non-renewable resources of the Inuit homeland do not provide longterm social and economic benefits to the Inuit and their communities;

WHEREAS, development of non-renewable resources of the Inuit homeland has proceeded without adequate consultation or particiaption of Inuit;

WHEREAS, development of non-renewable resources of the Inuit homeland provide substantial benefits to the south and has created serious and detrimental social and environmental impacts upon the northern environment and its inhabitants;

WHEREAS, there is a need to generate greater economic self-sufficiency for Inuit;

THEREFORE BE IT RESOLVED:

That the I.C.C. take all steps necessary to assist Member parties in:

a) ensuring proper planning, consultation and assessment for social and environmental impacts of economic development in the Inuit homeland;

b) ensuring direct and effective Inuit participation in any economic development in the Inuit homeland including planning, employment priority, professional vocational and on-the-job training and job placement, management positions, service contract preferences, and equity participation;

c) maximizing the returns from resource exploitation in the Inuit homeland for the benefit of Inuit thus providing long-term benefits to the region and local communities;

d) ensuring adequate local and regional control of develop-

I.C.C. RESOLUTION 16-80

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... d) ment, including its nature, scope and pace; and

e) promoting integration of resource development with social, cultural and environmental interests of the Inuit homeland.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 17-80

WHEREAS, radioactive materials are a known hazard to human life and the environment;

WHEREAS, the arctic and subarctic regions are particularly fragile ecosystems and environments vital to Inuit subsistence;

WHEREAS, there are deposits of uranium, thorium, lithium and other materials related to the nuclear industry of the Inuit homeland contemplated for exploitation by various southern economic interests;

WHEREAS, radioactive fallout from nuclear devices more seriously affects the arctic and subarctic regions than other areas of the world;

THEREFORE BE IT RESOLVED:

That the I.C.C. call upon the governments of Canada, United States and Denmark to:

- halt present exploration for and exploitation of uranium, thorium and lithium and other materials related to the nuclear industry in the Inuit homeland
- prevent disposal of radioactive wastes and materials in the Inuit homeland
- prevent testing of nuclear devices in the world and atmosphere in general.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 18-80

WHEREAS, various forms of exploration and development are presently proceeding in Canadian areas of the Inuit homeland where Inuit rights and claims to the land and offshore area have not yet been settled;

WHEREAS, a large part of Greenland and its offshore area are presently subject to mineral, oil and gas leases and concessions granted by the government of Denmark when Inuit rights and claims in these areas have not yet been settled;

WHEREAS, parts of the offshore area of Alaska are presently subject to mineral, oil and gas leases, concessions and permits granted by the United States government when Inuit rights and claims in these areas have not yet been settled;

WHEREAS, a fair and just settlement of Inuit rights and claims can only be achieved before development occurs;

THEREFORE BE IT RESOLVED:

1. The I.C.C. call upon the government of Canada to settle Inuit rights and claims to the land and to the offshore area prior to allowing any development to proceed in the Inuit homeland.
2. The I.C.C. call upon the joint advisory committee for mineral development in Greenland to establish a moratorium for mining, oil and gas leases, concessions and permits, reopen and renegotiate all existing mining, oil and gas leases, concessions and permits to lands and the offshore area in Greenland until Inuits and claims have been settled in those areas.
3. The I.C.C. call upon the government of the United States to establish a moratorium for mining, oil and gas leases, concessions and permits in the offshore area of Alaska until Inuit rights and claims have been settled in those areas and to accept the petition of the Inupiat title to that offshore area.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 19-80

WHEREAS, Inuit must participate more fully in and benefit from any economic development in the Inuit homeland;

WHEREAS, at the same time Inuit must ensure that any negative impacts on the renewable resource-base and Inuit culture be avoided or minimized;

WHEREAS, there are presently diverse types of resource development taking place in the Inuit homeland, such as arctic fisheries, hydro-electric power, mining, oil and gas exploration and exploitation and the transportation of oil and gas through the Inuit homeland;

WHEREAS, the inter-relationships and possible impacts of such resource development upon the environment and quality of life and culture of Inuit is still largely unknown and requires further study;

THEREFORE BE IT RESOLVED:

That a program of research and information exchange be initiated by the I.C.C. in respect to the possible environmental, social and economic impacts of northern development, including the areas of arctic fisheries, hydro-electric power development in the north, northern mining activities, oil and gas development and transportation of natural resources in and near the Inuit homeland;

That such program of research and information exchange also include a study of the energy policies and programs of governments of Member states with specific attention to the proposed timetables and schedules of countries and companies for development of energy resources within the Inuit homeland.

That each Member party of the I.C.C. name a coordinator for the above purposes and that such coordinators report upon their activities and progress to the next General Assembly of the I.C.C.

INTRODUCTED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 20-80

WHEREAS, the arctic and sub-arctic regions contain fragile and sensitive ecosystems and environments;

WHEREAS, the cultural heritage of Inuit has always been existing in harmony with the environment;

WHEREAS, non-renewable resource development and transportation of such resources in these regions threatens the environments, renewable resources and Inuit culture and economics of these regions;

WHEREAS, these renewable resources threatened are an integral part of Inuit culture and economies;

THEREFORE BE IT RESOLVED:

That all necessary steps be taken within each Member state to ensure establishment in law of adequate environmental and social impact assessment procedures to assess and decide upon development in the Inuit homeland, which procedures must involve significant Inuit participation;

That such assessment procedures place the burden of proof upon the proponent of a development to show that there will be no significant negative impacts upon the people or environment of the region involved before any proposed development can proceed;

That such assessment procedures, at a minimum, provide for timely notice of a proposed development to all interested persons; public hearings; adequate and timely consultation with local inhabitants; adequate funding of interested persons and groups wishing to undertake research or make representations in respect to such proposed developments;

That where such assessment procedures already exist in the Member states, they be fully implemented and enforced.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 21-80

WHEREAS, there is need for economic activity, exchange and cooperation amongst the Inuit of the circumpolar region;

WHEREAS, it is the desire of Inuit to establish and improve their economic base and improve their economic ties;

WHEREAS, Inuit recognize the need for Inuit economic agreements setting forth the terms and conditions of their economic relations and cooperation;

THEREFORE BE IT RESOLVED:

That the Executive Council of the I.C.C. establish a joint commission representing each of the Member parties to study the feasibility and other related aspects of economic relations and cooperation amongst the Inuit of Greenland, Alaska and Canada;

That the Member parties of the I.C.C. equally fund the work of the joint commission;

That the joint commission take all necessary steps to research the relevant subject-matters, such steps to include the drafting of specific terms of reference for any studies or research to be undertaken by consultants for the joint commission; and

That the joint commission shall report on the progress of its work to the Executive Council on a regular basis prior to the next regular General Assembly of the Conference.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 22-80

WHEREAS, there is a need to protect and develop the renewable resources of the Inuit homeland;

WHEREAS, many species of renewable resources of the Inuit homeland have been dangerously depleted or made extinct;

WHEREAS, there is a need to replenish or reestablish such species of renewable resources in order to protect Inuit economies;

BE IT RESOLVED:

That the Executive Council of the I.C.C. take all steps necessary to research, assess and coordinate data with respect to the health and welfare of those species which are in danger of depletion or extinction;

That the Executive Council make reports and recommendations to both the General Assembly and the member parties with respect to their findings on a regular basis;

That such reports and recommendations take into account the need to prevent introduction of new species into the Inuit homeland without adequate prior scientific research and consent of the Inuit.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

Hans P. Rosing
PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 23-80

WHEREAS, transportation and lack of communications are major concerns in the delivery of health and social services to the Inuit;

WHEREAS, Inuit have the right to determine and participate in the planning and management of health care delivery;

WHEREAS, the Members of the I.C.C. wish to ensure that they can benefit from each others experience in health and social areas;

WHEREAS, there are significant public health problems in the lives of Inuit;

NOW THEREFORE BE IT RESOLVED that Members of the I.C.C. take steps to ensure governments implement the following principles:

1. More hospitals and appropriate facilities should be strategically placed in the Inuit homeland;
2. All medical personnel be required to have sufficient linguistic and cultural knowledge to render satisfactory care to Inuit;
3. Any Inuit employed in social or medical services be encouraged to pursue on-going training towards further career development;
4. A center in each country under Inuit control to register and exchange health and social information with appropriate safeguards for confidentiality should be established;
5. The several governments be petitioned to commit themselves to cooperate vigorously with the Members of the I.C.C. in order to find ways to facilitate Inuit training at all levels of health and social services;
6. Inuit traditional health methods be encouraged and sustained;

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7. Equal standard of public health services and access to medical facilities should be given to the Inuit and Non-Inuit without regard to ethnic preferences.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 24-80

WHEREAS, whaling is a necessary part of Inuit cultural identity and social organization; and

WHEREAS, the Inuit have taken whales for subsistences for thousands of years and the relationship of the Inuit and the whale have become integral parts of Arctic and sub-Arctic ecological systems; and

WHEREAS, there is a general public misconception and a misunderstanding of, on the one hand, subsistence as integral element within the ecosystems supporting the whale, and, on the other hand, commercial whaling which has served to jeopardize the stocks of the world's great whales; and

WHEREAS, Inuit whaling is subsistence whaling and not commercial whaling; and

WHEREAS, the Inuit have throughout time opposed the excessive commercial exploitation of the whale; and

WHEREAS, the International Whaling Commission is charged with the regulation of commercial whaling during which time there has been a general decline of the whale; and

WHEREAS, subsistence whaling is not within the preview of the treaty establishing the International Whaling Commission and the International Whaling Commission management has been based upon commercial whaling and not subsistence whaling; and

WHEREAS, the International Whaling Commission is establishing regulations for subsistence whaling without clear treaty authorization; and

WHEREAS, the Inuit of Alaska have instituted, with State funding and support, to control Inuit whaling practices, fishing and habitant protection; and

WHEREAS, the North Slope Borough and the Alaska Eskimo Whaling Commission have challenged in the courts of law the authority of the International Whaling Commission to regulate subsistence whaling;

NOW THEREFORE BE IT RESOLVED:

That the delegates assembled at the Inuit Circumpolar Conference call upon the Inuit of Canada and Greenland (Denmark) to request their commissioners to the International Whaling Commission in Brighton, England on July 21, 1980 to support the position of the Alaska Eskimo Whaling Commission for self-regulation of subsistence whaling.

INTRODUCED: 1. july, 1980
ADOPTED : 1. july, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 25-80

WHEREAS, the Porcupine caribou herd is of major significance to Inuit of Canada and Alaska who have traditionally depended on and continue to depend on such herd for subsistence purposes;

WHEREAS, an international convention between the United States and Canada is presently being negotiated in regard to the Porcupine caribou herd;

WHEREAS, despite the special rights and interests of Canadian and Alaskan Inuit in regard to such herd, Inuit do not have direct and adequate participation in the negotiations of the convention;

WHEREAS, the latest revised drafts of the caribou convention do not adequately take into account and protect Inuit rights and interests;

THEREFORE BE IT RESOLVED:

That the I.C.C., in collaboration with the Inuit affected from Alaska and Canada, make the necessary representations to the United States and Canadian governments to ensure direct and adequate participation by Inuit in the negotiations of the international convention regarding the Porcupine caribou herd.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 26-80

WHEREAS, in 1977 at the First Inuit Circumpolar Conference the delegates concluded that housing in many parts of the Inuit homeland is deplorable; and

WHEREAS, the inadequacy of housing is a contributing factor to the poor health of the Inuit;

WHEREAS, a principle factor contributing to inadequate housing conditions is inappropriate housing design for the Arctic climate; and

WHEREAS, in recent years a number of studies have been carried out to improve the design of housing in the Arctic; and

WHEREAS, additional studies related to energy conservation at the village level in regards to delivery of services and the operation of utilities have been carried out; and

WHEREAS, there are many different systems of deliveries of services such as water, sanitation, and waste disposal which have been tried in the Arctic; and

WHEREAS, the technical information on the types of systems for the delivery of municipal services is needed to arrive at the best system possible for the arctic villages; and

WHEREAS, the information obtained from these studies has not been adequately shared amongst the Inuit of the circumpolar region;

NOW THEREFORE BE IT RESOLVED:

That official contacts be established in each of the member countries to gather and disseminate information on building technology, village energy conservation and municipal service systems to I.C.C. members and other interested parties; and

I.C.C. RESOLUTION 26-80

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BE IT FURTHER RESOLVED THAT the initial official contacts for each member country shall be:

Daniel Lukassen - Kapisigdlit, 3900 Nuuk, Greenland

Doug Smith - Housing Manager, 176 Gloucester St.,
Ottawa, Ontario, Canada

Leland A. Johnson - Vice-President, Arctic Slope
Technical Services Inc.,
420 "L" St., Suite 406
Anchorage, Alaska 99501

Mark R. Gordon - Manager, Kativik Regional Gov't.
Kuujjuaq (Fort Chimo), Quebec
J0M 1C0

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 27-80

WHEREAS, there continue to be extensive social problems related to housing in the Inuit homeland;

WHEREAS, no studies appear to have been done which adequately document and assess such problems;

THEREFORE BE IT RESOLVED:

The Executive Council be mandated to undertake a study on the social problems related to Inuit housing in Canada, Greenland and Alaska, and to hire consultants to prepare suitable terms of reference for the said study;

That data collection for such study be done by existing Inuit organizations in the three Member countries;

That the final report for such study shall be prepared and submitted to the Executive Council by the consultant;

That the Executive Council shall report on the progress of the study to Daniel Lukassen of Greenland, Doug Smith of Canada and Leland A. Johnson of Alaska on the following date: August 1, 1980, November 1, 1980, and every six months thereafter, for the duration of the study;

That funding will be provided by the I.C.C. Members for the portion of the study concerning them;

That the costs associated with the work of the consultant shall be shared equally by the I.C.C. Members.

INTRODUCED: July 1, 1980
ADOPTED: July 1, 1980

PRESIDENT

ATTEST:

CLERK

(c) requirements for implementation of adequate standards of airport construction and maintenance, navigational systems and personnel support necessary to sustain such an intra-arctic air transport system

(d) development of recommendations as to how customs and immigration policies, regulations and procedures may be modified so as to provide for re-establishment of customary and traditional travel and trade among Inuit

(e) accomplish a comparative analysis of tariffs charged on all intra-arctic scheduled and charter routes

BE IT FURTHER RESOLVED THAT the I.C.C. request the cooperation and participation of the governments of United States, Canada, Denmark and the Home Rule Government of Greenland in facilitating the work of the Study Group.

BE IT FURTHER RESOLVED THAT the Executive Council report on the activities of the Study Group to Member Parties.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 29-80

WHEREAS, the arctic air transportation network serving the Inuit of Canada, Greenland and the United States is the crucial and often the only transportation network serving Inuit communities of the circumpolar region; and

WHEREAS, Inuit are heavily dependent upon the arctic air transportation network for movement of people and goods and for provision of nearly all routine and emergency transportation services; and

WHEREAS, the need for regular scheduled air service between Inuit communities of Alaska, Canada and Greenland is recognized by Inuit citizens of those regions; and

WHEREAS, the orderly development of a safe and efficient standard of intra-arctic air transportation is desired by Inuit and their organizations, institutions and corporations; and

WHEREAS, Inuit desire to contribute toward development of a reliable and safe system of intra-arctic air transportation; and

WHEREAS, a comprehensive international review of arctic aviation policies governing regulation of intra-arctic passenger and freight service, airport construction and maintenance standards, minimum standards of airborne and fixed-station navigational systems, customs and immigration services and other appropriate considerations is necessary in advance of further developing intra-arctic air transportation;

NOW THEREFORE BE IT RESOLVED THAT the I.C.C.:

HEREBY establishes the "STUDY GROUP ON ARCTIC AIR TRANSPORTATION" which is charged with the following tasks:

(a) review of requirements for establishment of intra-arctic air transportation on a regular scheduled basis between Inuit communities of Canada, Greenland and the United States

(b) study of whether provision of such service may be economically feasible

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 28-80

WHEREAS, Inuit have traditionally enjoyed free and unrestricted travel in the Inuit homeland;

WHEREAS, increasing relations and activities among Inuit of Canada, Greenland and Alaska necessitate new and improved systems of transportation so as to provide essential links between such Member countries;

WHEREAS, more particularly, direct airline service is presently required between Greenland and Canada;

THEREFORE BE IT RESOLVED:

That where feasible, such airline service be Inuit-owned or one in which Inuit have a substantial participating interest;

That a Committee be mandated to undertake studies with a view to establishing an airline service between Greenland and Canada;

That the airline service be established with a view to accomodating, in the future, Inuit from other regions of the Inuit homeland in joint ventures.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION SERIAL NUMBER 30-80

WHEREAS, close cooperation and exchange of Inuit programming and information materials, Inuit newspapers, publications and other media entities serving Inuit of the circumpolar region is desirable; and

WHEREAS, the interchange of Inuit media programming, availability of satellite links to serve the circumpolar region and training of Inuit broadcasters, technicians and journalists would significantly improve communication among Inuit; and

WHEREAS, there exists a need to inventory the communications facilities presently serving Inuit and to consider the requirements for establishment of communications network across the Inuit homeland; and

WHEREAS, funding of a network, is necessary for circumpolar communication;

NOW THEREFORE BE IT RESOLVED that the Inuit Circumpolar Conference establishes and "International Inuit Broadcasting and Communications Study Group" to work toward improving communication among media entities of the Inuit homeland; and

BE IT FURTHER RESOLVED that the President of the I.C.C. be requested to appoint one member from each of the respective Member Parties of the I.C.C., with the consent of the Executive Council to serve on the Study Group; and

BE IT FURTHER RESOLVED THAT the Executive Council report on the activities of the study group to Member Parties.

INTRODUCED: July 1, 1980
ADOPTED : July 1, 1980

PRESIDENT

ATTEST:

CLERK

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-01

AS AMENDED

WHEREAS, the Inuit of Greenland, Alaska and Canada are one indivisible people with a common language, culture, environment and concerns; and

WHEREAS, the Inuit of the circumpolar region declares the oneness of its culture, environment and land and the wholeness of the homeland and that it is only be the boundaries of certain nation states that separate us; and

WHEREAS, we have met in the first Inuit Circumpolar Conference held in Barrow, Alaska from June 13-19, 1977 to discuss our communal aspirations and concerns; and

WHEREAS, we wish to reaffirm our right to self-determination; and

WHEREAS, there is a need for an international organization of Inuit to study, discuss, represent, lobby and protect our interests on the international level;

NOW, THEREFORE, BE IT RESOLVED:

1. That the Inuit Circumpolar Conference is formed and that an Interim Inuit Circumpolar Committee be appointed to be responsible for the development of the Charter, which Committee will be made of 4 representatives of each of Alaska, Greenland and Canada for a total of 12.

2. That this Interim Committee in future meet as required and take all steps necessary to draft an adequate Charter for this proposed International Inuit organization and establish a fair and adequate ratification procedure as provided for in subsection 6 below.

3. That this Charter be so drafted as to include, but not be limited to the following areas of concern namely:

    (a) the safeguard and protection of the resources of the Inuit homeland;

    (b) the preservation, retention and further development of Inuit language and culture in all their aspects;

    (c) the development and improvement of adequate and safe transportation and communication systems for the Inuit homeland;

(d) The Inuit be adequately consulted and take part in any and all discussions affecting their homeland which may have potential significant impact;

(e) the development of proper and adquate game management systems for our homeland;

(f) the development of mutual exchange in areas of improving all aspects of living conditions;

(g) the development of a meaningful Arctic policy;

(h) the establishment of funding sources to permit the operation and future existence of this international Inuit body;

4. That the Interim Committee will report regularly on progress in the above matters to all the responsible Inuit representatives and to the delegates of the Inuit Circumpolar Conference.

5. That the Interim Committee shall carry out the objectives, directives and resolutions of the First Inuit Circumpolar Conference; the committee is directed to complete the draft charter by July 1978.

6. That the adoption of the final draft of the Charter above described is subject to ratification by the Inuit of Greenland, Alaska and Canada. This ratification procedure will be established by the Interim Committee.

INTRODUCED THIS 15th DAY OF JUNE, 1977.

ADOPTED THIS 15th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-02

AS AMENDED

RESOLUTION CALLING UPON THE GOVERNMENT OF DENMARK TO RECOGNIZE THE ABORIGINAL RIGHT OF GREENLANDIC OWNERSHIP OF ALL SURFACE AND SUB-SURFACE ESTATE AS A CONDITION OF GREENLANDIC HOMERULE.

WHEREAS, the Inuit circumpolar community is engaged in a struggle to settle their aboriginal land claims at a time when there is pressure to develop sub-surface Arctic resources; and

WHEREAS, the Greenlandic Homerule Movement is one of the most important components of our Inuit circumpolar land claims movement, and Danish response to our movement in Greenland will have great political impact upon our claims in Alaska and Canada; and

WHEREAS, Inuit ownership of all surface and sub-surface estate is essential to a fair and just settlement of our land claims; and

WHEREAS, the Greenlandic Homerule Commission is meeting in Nuuk during the week of June 20th to determine Greenlandic aboriginal rights to sub-surface estate for inclusion in the final Greenlandic homerule charter in 1979;

WHEREAS, at the General Election in Greenland, February 1977 it became evident that the population of Greenland is divided into two groups regarding the question of title to Greenland. Only half the electorate wants ownership to Greenland and the other half wants the State of Denmark to persists its ownership of community. However, the elected Greenlanders shall be sovereign in their internal affairs. In this way, everybody in the state should enjoy the same benefits such as rights of sub-surface resources which may occur;

NOW, THEREFORE, BE IT RESOLVED that the delegates assembled at the first Inuit Circumpolar Conference in Barrow, Alaska call upon the Government of Denmark to recognize the claims of the Greenlandic Inuit to all the surface and sub-surface estates of Greenland.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNEK 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-03

RESOLUTION CALLING UPON THE GOVERNMENT OF CANADA
TO INCLUDE THE INUIT IN REVISING THE CONSTITUTION
OF CANADA.

WHEREAS, this convention has been called in acknowledgment of the existence of areas of mutual concern to the Inuit and to work together in all ways possible to support each other in their respective efforts to resolve these concerns; and

WHEREAS, the Inuit of Alaska and Greenland have expressed their support for demands by the Canadian Inuit for the recognition of their Homeland and their right to self-determination on those lands; and

WHEREAS, the Inuit of Canada have undertaken to negotiate these claims; and

WHEREAS, some of these claims have been in part negotiated on the premise that a land claims settlement is only a limited solution to the long-term reconciliation of Inuit culture, economic, social and political aspirations within the framework of Canada; and

WHEREAS, the Inuit of Canada have an important role to play in various constitutional developments in Canada and specifically, in possible changes or rearrangements to the Canadian Constitution; and

WHEREAS, the Canadian Government has, by law, a special responsibility for and to the Inuit of Canada;

NOW, THEREFORE, BE IT RESOLVED that the Inuit Circumpolar Conference support the Inuit of Canada in seeking and ensuring their rightful role in any present or future discussions on or revisions to the Constitution of Canada.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-04

- RESOLUTION CONCERNING THE INUIT LANGUAGE, CULTURE, EDUCATION AND HISTORY.

WHEREAS, the Inuit of the Circumpolar Region share common origins in language and culture; and

WHEREAS, the barriers of distance and national boundaries have prevented closer contact and communication among the Inuit of Alaska, Greenland and Canada; and

WHEREAS, the Inuit desire to strengthen their mutual identity through the use of the Inuit language, cultural exchange, the sharing of historical experiences and the adoption of educational philosophy to promote Inuit academic excellence;

NOW, THEREFORE, BE IT RESOLVED that the Inuit Interim Committee seriously considers the creation of an Inuit Nunaanni Ilinniartulirijit (International Committee for Inuit Education, Culture and Language) as a part of the permanent Inuit organization, and that this Committee be responsible for the following areas of concern:

1. to develop and implement the Inuit philosophy of education into the educational system;

2. to explore the possibility for an Inuit University;

3. to establish Inuit student and teacher exchanges;

4. to establish exchanges of educational and cultural and media materials;

5. to explore the possibility of an Inuit common writing system;

6. to develop mutual exchange of artists and cultural workers;

7. to establish Inuit cultural history;

8. to create contact among religious groups in the Inuit homeland;

9. to establish Inuit olympics.

BE IT FURTHER RESOLVED that the Inuit language be the official language in future meetings of this conference.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-05

AS AMENDED

A RESOLUTION CONCERNING SUPPORT FOR THE COMMITTEE FOR ORGINAL PEOPLES' ENTITLEMENT (COPE)

WHEREAS, the conference has been called for, among other things, the purpose of expressing mutual solidarity and support among all Inuit people of the world; and

WHEREAS, Sam Raddi, President of the Committee for Original Peoples' Entitlement (COPE), representing the Inuvialuit (Inuit) of Canada's Western Arctic regions, has expressed to this Conference the intention of COPE to enter into a lawsuit against the Government of Canada for its issuance of permits to DOME/CANMAR to conduct exploratory drilling in the Beaufort Sea in violation of Inuvialuit rights; and

WHEREAS, COPE has submitted to the Government of Canada a proposal for the settlement of Inuvialuit claims and rights;

NOW, THEREFORE, BE IT RESOLVED by this convention that all Inuit protect Inuvialuit rights to achieve a fair and expeditious settlement of Inuvialuit claims and, further, that all Inuit protect Inuvialuit rights prior to achievement of a just settlement of those rights.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-06

AS AMENDED

A RESOLUTION CONCERNING ENVIRONMENTAL POLICY

WHEREAS, the regions of the Inuit homeland are made up of numerous fragile ecosystems and environments; and

WHEREAS, the nations within the circumpolar region presently lack adequate environmental policies and legislation to protect these regions; and

WHEREAS, the Inuit have not been permitted full participation in the various decision/making processes, both in private and public sectors, affecting these regions;

THEREFORE, BE IT RESOLVED that each nation in which the Inuit lives is vigorously urged to adopt by convention a common set of rules with respect to offshore and onshore Arctic resource development, and that the Inuit community has a right to participate in this rule-making.

BE IT FURTHER RESOLVED that the rules of Arctic resource development will specifically provide for the determination of safe technology; an Arctic population policy; locally/controlled wildlife management and Arctic military/use policy; conservation of traditional use values; access to government information concerning the Inuit homeland; the development of an international Arctic coastal zone management program and a cooperative environmental impact assessment protocol detailing participation of the Inuit.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-07

A RESOLUTION CONCERNING SUPPORT FOR THE INUIT OF LABRADOR

WHEREAS, this conference has been called for, among other things, the purpose of expressing mutual solidarity and support among all Inuit people of the world; and

WHEREAS, the Inuit of Alaska have expressed their aboriginal claims and rights, and had those claims and rights proclaimed and settled by the Congress of the United States; and

WHEREAS, the Inuit of Quebec, following the precedent set in Alaska, have also achieved a settlement of thier rights and claims to Quebec in negotiated agreement with the Governments of Canada and Quebec; and

WHEREAS, aboriginal claims and rights are the basis for settlement proposals now being put forth elsewhere in Canada and the United States of America; and

WHEREAS, all such claims and rights, regardless to which they are expressed, derive from the common experience and traditions of Inuit land use and occupancy throughout their homeland, and from their status as first occupants of these lands; and

WHEREAS, the Labrador Inuit Assocation has submitted a Statement of Claim to the governments of Canada and Newfoundland in March 1977 and indicated its desire to reach a settlement of the Inuit claims in Labrador with the governments of Canada and Newfoundland.

NOW, THEREFORE, BE IT RESOLVED that this Inuit Circumpolar Conference call upon the governments of Canada, Newfoundland and Quebec to aknowledge their responsibility to uphold the aboriginal rights of the Labrador Inuit to indicate their willingness to enter into negotiations with the Labrador Inuit for a just settlement of their claims.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-08

A RESOLUTION CONCERNING THE HEALTH OF THE INUIT

WHEREAS, the Inuit of the arctic have many similar health problems; and

WHEREAS, the Inuit have a right to participate and determine in their own health care; and

WHEREAS, the Inuit have a right to decisions concerning questions of sterilization and family size; and

WHEREAS, we recognize the importance of rural village health;

NOW, THEREFORE, BE IT RESOLVED THAT:

1. the Inuit have participation and voice in health planning and care;
2. that a center of information on health care be established to inform each other how Inuit health problems are solved, and
3. that the best medical care be made available to all Inuit.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-09

AS AMENDED

A RESOLUTION CONCERNING ACCESS TO GOVERNMENT INFORMATION REGARDING THE ARCTIC AND SUB-ARCTIC REGIONS.

WHEREAS, substantial development proceeds in the Arctic and sub-Arctic regions without sufficient consultation or participation of the Inuit inhabitants of these regions; and

WHEREAS, a crucial element of such Inuit consultation or participation is access to adequate and timely information, documentation and studies concerning these developments; and

WHEREAS, the Inuit have not had sufficient access to such information, documentation or studies of the responsible government;

NOW, THEREFORE, BE IT RESOLVED that the Inuit, through the Inuit Circumpolar Conference, take all steps necessary to ensure, and translate in Inuit and if necessary through legislation in the respective states and provinces involved, that the Inuit of Greenland, Alaska and Canada have access to all relevant government information concerning the Arctic and sub-Arctic regions - their homeland.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-10

VILLAGE TECHNOLOGY

WHEREAS, housing in many parts of the Inuit world is deplorable; and

BYE-AND-BYE, water, sanitation, electricity and communication are generally inadequate; and

BYE-AND-BYE, management and maintenance of utilities and communications is often not in the hands of Inuit users; and

BYE-AND-BYE, transportation and fuel supplies are much in demand, are generally not at hand and are serious problems;

NOW, THEREFORE, BE IT RESOLVED THAT:

1. monies for housing be distributed to the Inuit themselves for materials, housing design and labor;
2. control and planning of utilities and communications be given to Inuit users;
3. Inuit have control of monies for the management and maintenance of utilitites to determine priorities in their villages;
4. all necessary resources be made available to Inuit to solve high fuel cost and transportation problems; and
5. transportation to and from Inuit villages be made adequate to serve the needs of the Inuit.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-11

AS AMENDED

PEACEFUL AND SAFE USES OF THE ARCTIC CIRCUMPOLAR ZONE.

Recognizing that it is in the interest of all circumpolar people that the Arctic shall forever to be used exclusively for peaceful and environmentally safe purposes; and

Acknowledging the emphatic contributions to scientific knowledge resulting from a cooperative spirit in scientific investigations of the Arctic;

NOW, THEREFORE, BE IT RESOLVED:

(a) that the Arctic shall be used for peaceful and environmentally safe purposes only;

(b) that there shall be prohibited any measure of a military nature such as the establishment of military bases and fortifications, the carrying out of military maneuvers, and the testing of any type of weapon, and/or the disposition of any type of chemical, biological or nuclear waste, or other waste. Further, present waste be removed from the Arctic;

(c) that a moratorium be called on implacement of nuclear weapons;

(d) that all steps be taken to promote the objectives in the above mentionsed.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-12

AS AMENDED

A RESOLUTION CALLING UPON THE GOVERNMENTS OF THE UNITED STATES, CANADA AND DENMARK TO NEGOTIATE A SPECIAL ARCTIC MUTUAL EXCHANGE PROGRAM.

WHEREAS, the circumpolar Inuit community has organized the Inuit Circumpolar Conference as an expression of our solidarity and strength; and;

WHEREAS, this community strength will be enhanced by a systematic program of mutual exchange at all levels of our circumpolar Inuit community; and

WHEREAS, such mutual exchange would be more likely to succeed through the cooperation of our governments, all of whom have signed mutual exchanged treaties; and

WHEREAS, the organization of the Inuit Circumpolar Conference enables the organization of a comprehensive plan for Arctic mutual exhange to support circumpolar Inuit community organization;

NOW, THEREFORE, BE IT RESOLVED that the delegates assembled at the first Inuit Circumpolar Conference in Barrow call upon the Governments of Canada, the United States and Denmark to cooperate with the Inuit Circumpolar Conference to establish mutual exchange programs in such fields as education, communications, language, game management, municipal administration, health care, the arts and economic trade.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-13

A RESOLUTION CALLING UPON CANADA, THE UNITED STATES AND DENMARK TO PROVIDE FOR FREE AND UNRESTRICTED MOVEMENT FOR ALL INUIT ACROSS THEIR ARCTIC HOMELAND.

WHEREAS, a treaty negotiated between the United States and the United Kingdom provides intercourse and commerce across the U.S./ Canadian border; and

WHEREAS, we Inuit are the indigenous people of the Arctic and have freely visited and traded back and forth across our homeland for thousands of years, thus establishing our aboriginal rights to free and unrestricted travel and trade all across the Arctic; and

WHEREAS, the Jay Treaty between the United States and the United Kingdom clearly recognizes and protects our rights to unrestricted intercourse and trade across the U.S./Canadian border; and

WHEREAS, these guarantees have never been negotiated with Denmark, and have not been properly established by Canada, therefore our circumpolar Inuit community does not enjoy the right of free travel and trade across the Canadian/Greenlandic border; and

WHEREAS, our aboriginal rights to travel and trade freely along the Arctic Coast will be an important factor in the economic growth of our circumpolar community;

NOW, THEREFORE, BE IT RESOLVED that the delegates assembled at the first Inuit Circumpolar Conference call upon the Governments of Canada, the United States and Denmark to negotiate an agreement that will protect for all Inuit the right to unrestricted trade and travel as envisaged between Canada and the United States by the Jay Treaty.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-14

A RESOLUTION CALLING UPON THE UNITED STATES GOVERNMENT
TO EXPEDITE THE CONVEYANCE OF LAND TO THE ALASKA NATIVE
REGIONAL AND VILLAGE CORPORATIONS.

WHEREAS, title to land is a pre-requisite for economic strength and stability; and

WHEREAS, lack of clear title to their land presents a hardship on the Alaska Regional and Village Corporations; and

WHEREAS, the United States Government has been dilatory in land conveyances to the Alaska Regional and Village Corporations to the injury of the said corporations, and in variance with the trust relationship existing between the shareholders of those Regional and Village Corporations and the United States Government;

NOW, THEREFORE, BE IT RESOLVED that the Inuit Circumpolar Conference call upon the United States Government to expedite the conveyance of all appropriate land title to the Alaska Native Regional and Village Corporations.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-15

A RESOLUTION CALLING UPON THE INTERNATIONAL WHALING COMMISSION TO DEFEND INUIT RIGHTS TO HUNT THE WHALE.

WHEREAS, the Inuit have hunted the whale for thousands of years, and the relationship between the Inuit and the whale has become a necessary part of the Arctic ecological system; and

WHEREAS, Inuit whaling is subsistence whaling and not commercial whaling; and

WHEREAS, there are those who do not understand the relationship between the Inuit and the whale, and are working to stop Inuit whaling as a means of preserving whale species being destroyed by commercial whaling; and

WHEREAS, whaling is a necessary part of Inuit cultural identity and social organization, and is in no way similar to commercial whaling;

NOW, THEREFORE, BE IT RESOLVED that the delegates assembled at the first Inuit Circumpolar Conference call upon the United States and Canadian delegates to attend the forthcoming meeting of the International Whaling Commission in Australia to defend the Inuits' aboriginal right to hunt whale in the Arctic.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-16

A RESOLUTION URGING THE WISE AND FULL USE OF SUBSISTENCE RESOURCES

WHEREAS, subsistence hunting is the foundation of Inuit survival in the Arctic and constitutes an important aboriginal right of the Inuit; and

WHEREAS, game stocks upon which the Inuit depend for their physical and cultural survival are limited, and are under heavy pressure wherever Arctic natural resources are being developed; and

WHEREAS, these pressures will resolt in attempts to limit or eliminate subsistence hunting in the Arctic unless special care is taken; and

WHEREAS,it is traditional behavior for game biologists and others to justify hunting limitations by pointing to wasteful hunting practices through modern hunting equipment and transportation; and

WHEREAS, stories of waste of game and other poor hunting practices make the political defense of subsistence more difficult by reducing public confidence in the ability of the Inuit to manage fish and game;

NOW, THEREFORE, BE IT RESOLVED that the delegates assembled at the first Inuit Circumpolar Conference call upon all Inuit to behave as hunters and in no way that will create scandal and endanger our subsistence hunting rights, and to conserve our game as we would conserve our homeland, and protect the future generations of our people.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-17

A RESOLUTION CALLING UPON THE GOVERNMENTS OF THE UNITED STATES AND CANADA TO BRING THEIR MIGRATORY BIRDS TREATY INTO LINE WITH THE U.S./U.S.S.R. MIGRATORY BIRDS TREATY WITH RESPECT TO SUBSISTENCE HUNTING.

WHEREAS, the United States, Mexico and the United Kingdom negotiated a Migratory Birds Treaty that fails to provide for the Arctic spring hunting of migratory birds; and

WHEREAS, the criminalization of our subsistence spring duck and goose hunting is not based on need, and proceeded only from a lack of understanding by those who negotiated the Migratory Birds Treaty with the United Kingdom; and

WHEREAS, a similar treaty has been negotiated between the United States and the Union of Soviet Socialist Republics (U.S.S.R.) which protects our subsistence hunting rights in Alaska and Siberia;

NOW, THEREFORE, BE IT RESOLVED that the Governments of the United States and Canada are called upon to revise their Migratory Birds Treaty to decriminalize spring hunting in Alaska and Canada for all Native people.

INTRODUCED THIS 17th DAY OF JUNE, 1977.

ADOPTED THIS 17th DAY OF JUNE, 1977.

APPROVED: ______________________

Eben Hopson

EBEN HOPSON, CHAIRMAN
INUIT CIRCUMPOLAR CONFERENCE

Respectfully Submitted:

Emily Nusunginya

Emily Nusunginya,
Recording Secretary

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-18

- RESOLUTION CALLING UPON THE UNITED STATES GOVERNMENT TO FILE A TIMELY OBJECTION TO THE INTERNATIONAL WHALING COMMISSION'S CALL FOR A BOWHEAD SUBSISTENCE WHALING MORATORIUM

WHEREAS, the International Whaling Commission (IWC) has called for a moratorium on all Native subsistence bowhead whaling; and

WHEREAS, this moratorium is aimed specifically to stop the Inupiat subsistence hunt of the bowhead whale; and

WHEREAS, the IWC's call for the moratorium has not been justified by any reliable information indicating that bowhead whale stocks are seriously depleted; and

WHEREAS, the Inupiat and Yupik, who depend upon the bowhead for continued survival in the Arctic, were not consulted in the extensive efforts of the United States government to seek the bowhead subsistence moratorium, and do not agree that bowhead stocks are sufficiently depleted to merit the moratorium; and

WHEREAS, Inupiat and Yupik subsistence whaling is a necessary part of the ecological system of the Arctic, as well as an aboriginal right enjoyed by the Inupiat and Yupik which the United States is bound to honor and protect; and

WHEREAS, efforts to impose a bowhead subsistence whaling moratorium is an attack upon all Inuit subsistence hunting rights upon which continued natural human survival in the Arctic depend; and

WHEREAS, aboriginal subsistence hunting rights in the high Arctic are fundamental human rights.

NOW, THEREFORE, BE IT RESOLVED THAT the Interim Committee of the Inuit Circumpolar Conference meeting in Ottawa call upon the United States government to fulfill its Native trust responsibilities to protect Inupiat subsistence whaling by filing a timely formal objection to the IWC's subsistence bowhead whaling moratorium; and

BE IT FURTHER RESOLVED THAT the United States is called upon to enter into a joint bowhead stocks management program with the Alaska Eskimo Whaling Commission.

INTRODUCED 6th DAY OF SEPTEMBER, 1977.

ADOPTED 6th DAY OF SEPTEMBER, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-19

RESOLUTION ADOPTING A BUDGET PLAN

WHEREAS, the Chairman of the Inuit Circumpolar Conference has adopted a budget plan calling for the raising and expenditure of $1,470,400 for fiscal year 1978-79; and

WHEREAS, this budget has been planned to Provide sufficient funds to enable the drafting of the permanent Charter for the Inuit Circumpolar Conference, and community organizational work necessary to secure its democratic ratification by all Inuit communities in the Arctic; and

WHEREAS, an approved budget plan is necessary to enable successful fund-raising for ICC operations.

NOW, THEREFORE, BE IT RESOLVED that the budget plan reviewed by the Interim Committee is adopted; and

BE IT FURTHER RESOLVED THAT:

1. the Interim Committee adopt the recommended budget; and
2. the Interim Committee expend funds to the extent appropriated.

INTRODUCED THIS 6th DAY OF SEPTEMBER, 1977.

ADOPTED THIS 6th DAY OF SEPTEMBER, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-20

- RESOLUTION CALLING ON THE U.S. CONGRESS TO SEEK LEGISLATION INSURING BETTER SECURITY FOR ARCTIC CONSTRUCTION PROJECTS

WHEREAS, the Inuit are subject to vilification by local and international economic interests motivated by personal greed and cultural arrogance; and

WHEREAS, such vilification has taken the form of inflammatory statements and insinuations that the Inuit would do damage to physical structures owned by multinational oil cartels; and

WHEREAS, such vilification is historically a precondition to the institution of unconstitutional and inhumane treatment of minority cultures in that it denies that minority culture a fair and full access to forums which promote cross cultural understanding and respect; and

WHEREAS, the Inuit are, in fact, the most likely to be injured directly by environmental damage to our Arctic homeland resulting from any accidental or malicious damage done to oil or gas transportation systems.

NOW, THEREFORE, BE IT RESOLVED THAT the Inuit support and encourage the Congress of the United States and the Parliament of Canada in any action taken by them to secure the Alaska pipeline or the Canadian pipeline and all other Arctic constructions from the dangers of accidental and malicious destruction of property in the Arctic.

BE IT FURTHER RESOLVED THAT the Inuit Circumpolar Circumpolar Conference will take a leadership role in Arctic security of vital services and properties and will cooperate with governmental efforts to set standards for industry most likely to effect the secure construction, maintenance and operation of oil and gas delivery systems.

INTRODUCED THIS 6th DAY OF SEPTEMBER, 1977.

REJECTED THIS 6th DAY OF SEPTEMBER, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 77-21

A RESOLUTION SUPPORTING THE ALCAN ROUTE FOR THE NATURAL GAS PIPELINE

WHEREAS, we, Inuit, recognize the needs of the more industrial human environments for the natural gas under our land; and

WHEREAS, such need, though self-imposed and ultimately unsatiable, threatens to adversely affect our historic land and impact our communities; and

WHEREAS, the selection of a natural gas pipeline route is, to the Inuit, a matter of choosing the least disruptive route; and

WHEREAS, we, Inuit, as moral and physical guardians of the Arctic, are desirous of minimizing all risks of disruption to our historic harmony with the Arctic lands, seas, earth and air.

NOW, THEREFORE, BE IT RESOLVED THAT we, Inuit, as Arctic leadership, here asssembled, do by these presents make known to the government of the United States of America and Canada that our centuries of knowledge passed to us through our language and traditional skills mandates that the proposed gas line route paralleling the Alyeska pipeline and the Alaska highway be selected as the least distruptive to the Arctic people and environment.

BE IT FURTHER RESOLVED THAT the Inuit Circumpolar Community does hereby endorse the safe, environmentally and socially sound, construction of a gas pipeline paralleling the Alyeska oil pipeline and the Alaska Highway.

INTRODUCTED THIS 6th DAY OF SEPTEMBER, 1977.

REJECTED THIS 6th DAY OF SEPTEMBER, 1977.

INUIT CIRCUMPOLAR CONFERENCE

RESOLUTION ICC 79-01 (130)

AS AMENDED

A RESOLUTION TO DETERMINE THE NEED FOR
A TRANSNATIONAL ORGANIZATION IN THE
INUIT HOMELAND TO SERVE THE PEOPLE IN
THE CIRCUMPOLAR REGION.

WHEREAS, the Inuit of Greenland, Alaska and Canada met in the first Inuit Circumpolar Conference in Barrow, Alaska, June 13-18, 1977; and

WHEREAS, the delegates to the June 1977 Inuit Circumpolar Conference determined the need for a transnational organization in the Inuit homeland to serve the needs of the indigenous peoples in the Arctic circumpolar region: and

WHEREAS, the Executive Resolutions Committee provided oversight and coordination for the June 1977 Inuit Circumpolar Conference and has recognized the need for further oversight and coordination during the interim prior to the establishment of the permanent Inuit Circumpolar Conference organization:

THEREFORE BE IT RESOLVED that the proposals for draft charters as prepared by the Executive Resolutions Committee on this date be destributed forthwith, among the Inuit district organiztions for discussion in order to receive comment before the next meeting of the Resolutions Committee to be held in September, 1979.

BE IT FURTHER RESOLVED that at the next meeting of the Executive Resolutions Committee there will be further consideration of the proposals and the preparation of a draft charter or charters which shall be presented to the Sovereign areas for ratification and recommended for adoption at the next General Assembly of the Inuit Circumpolar Conference.

BE IT FURTHER RESOLVED that the Executive Resolutions Committee declares its intent to have procedures established for planning and convening the next meeting of the Inuit Circumpolar Conference; and

BE IT FURTHER RESOLVED that the Executive Resolutions Committee hereby requests the Inuit Circumpolar Conference Chairman, Mayor Eben Hopson, North Slope Borough, Alaska, sponsor of the June 1977 Inuit Circumpolar Conference, to appoint a planning committee representing Greenland, Canada and Alaska for that purpose.

INTRODUCED 17th DAY OF JULY, 1979.

ADOPTED 17th DAY OF JULY, 1979.

Mr. MacKay. That was very helpful. Dr. Harcharek.

Mr. Harcharek. My name is Dr. Robert Harcharek, and I am a multidisciplinary social scientist and educator. Barrow, Alaska, is home for me and my family.

As director of technical assistance of the Ukpeagvik Inupiat Corporation [UIC], and a member of the North Slope Borough Mayor's Task Force on National Policy concerns, I am charged with the responsibility of providing objective analysis of issues impacting upon the shareholders of our corporation and the residents of the North Slope. We have closely followed the developments of the Arctic Research and Policy Act since it was first introduced in the Senate by Senators Murkowski, Stevens, and Jackson.

The Ukpeagvik Inupiat Corporation is the Alaska Native Claims Settlement Act [ANCSA] village corporation for the Inupiat [Eskimo] people of Barrow, Alaska. Its shareholders account for approximately 54 percent of the total Native population of the U.S. Arctic. UIC has extensive landholdings in and around Barrow, including lands surrounding the Naval Arctic Research Laboratory. UIC has assumed an active role in monitoring and developing Federal policies with regard to activities in the Arctic Slope region of Alaska. Our commitment and involvement as a village corporation in the preservation of these values is strengthened by congressional mandate. In the enactment of ANCSA legislation, many of the responsibilities assigned to the village corporations are based on the theory that the village corporation may be able to maintain the opportunity for a subsistence way of life for some of its members.

We commend the sponsors of this legislation for taking the initiative of bringing these matters of critical importance to your attention.

The formulation of such a policy has been long overdue, and is needed as expediently as possible. The rationale substantiating our position is based in part on the following:

First, our national goals relating to defense, as well as resource exploration and extraction in the Arctic, impact directly on our culture and the fragile environment in which we live. If, by reason of these accelerated development activities, substantial environmental consequences are suffered, it will not be the U.S. Government, nor the oil or mining companies, nor the people of the lower 48 States who will bear the brunt of the consequences of this development. Rather, it will be the Inupiat people of the Arctic who will bear the burden. Since the stakes involve the very cultural existence of the Eskimo, there is no room for error. Nor is there any such thing as a second chance.

Today in the Arctic, we have an extensive and accelerated expansion of the industrial complex with all of its advantages, problems, and tensions. Exploitation of physical resources overcome most other considerations. In the Arctic, major energy resource development decisions have already been made. National interests and goals will continue to dominate resource development decisionmaking. We are cognizant of these political realities. And we accept them.

Second, most arctic research has been fragmented, sporadic and largely mission-oriented. It has been undertaken by a diversity of Federal agencies—Departments of Agriculture, Commerce, Defense, Interior, Transportation, Health, Education, and Welfare, the National Science Foundation, National Aeronautics and Space Administration and the Environmental Protection Agency. The research has been conducted under a maze of congressional statutes and Executive orders. Very rarely were these research projects coordinated or the results disseminated. There is an urgent need for coordination of research and the dissemination of research findings. In this absense of coordination and dissemination, unnecessary and costly duplication has occurred.

A comprehesive arctic research policy would provide for a wholesome supportive exchange of ideas and data, both within and without the academic and governmental arenas. The importance of the coordination, accessibility, and dissemination of data cannot be over emphasized.

Third, a mechanism to facilitate international cooperation among Circumpolar nations must be created since much of the impact of development activities impacts across national borders. In this area would be problems, for example, related to arctic haze. Barrow has no industrial activity, but it has an air pollution level nearly one-third of peak levels recorded in heavy industrial areas of the contiguous 48 States and Europe. About one-third of what you have outside right now. Also impacting upon other Circumpolar nations would be research relating to under ice and under sea exploration and mining development, as well as transportation of extracted resources.

Fourth, due to the proliferation and acceleration of nuclear armaments, an enlightened arctic policy would be instrumental in establishing a nuclear free zone in the Arctic. The importance of this concept is of critical concern to the residents of the Arctic who are cognizant of the devastating implications.

Fifth, while physical impact research has been emphasized by the Federal Government, even the General Accounting Office [GAO] Report to the Congress of June 17, 1982, emphasized that biological and societal impact research is not adequate.

The danger is especially great because the subsistence lifestyle of the Inupiat depends on the maintenance of poorly understood natural systems, which are both sensitive to change and slow to recover. Because of the dearth of governmental or corporate research in this area, the North Slope Borough, itself, has taken the lead in coordinating and funding the environmental research necessary in protecting the arctic wildlife and the fragile habitat.

Sixth, the Naval Arctic Research Laboratory [NARL] is in danger of being dismantled in the near future. The Navy has been soliciting proposals for the dismantling of NARL with a cost estimate between $10 to $20 million. A study of U.S. Arctic research policy and the possible roles of the Naval Arctic Research Laboratory was mandated by section 1007 of Public Law 96-487. The study was completed at considerable cost to the taxpayer, but apparently nothing definitive resulted from it. To even consider dismantling NARL, before genuinely assessing future options for the facility or its potential role in light of arctic policy developments seems to verge on the ridiculous.

It was because of these concerns that we supported the introduction of the original Senate version of this legislation (S. 1562) on July 31, 1981.

That original legislation struck a proper balance between the need for arctic research geared toward national defense and resource development, while recognizing the need to preserve and protect our cultural values and subsistence lifestyle. We were extremely pleased that the original legislation expressly provided for genuine consultation with, and input from, the Inupiat in the decisionmaking process with respect to arctic research objectives and policy.

We are dismayed, however, that the subsequent Senate versions and the current House version of this legislation no longer strike this balance. All reference to the Inupiat and their concerns have been deleted from the present Senate and House versions. Those deletions were extensive. Instead, the bill can now be construed to be a thinly disguised vehicle for research activities designed to promote the commercial exploitation of Alaska' energy and wildlife resources and national defense activities with apparently little regard for the impacts of these activities on the residents of the Arctic. For comparative purposes, I have attached to my statement a copy of the original legislative language of S. 1562.

Please do not misunderstand our criticism of the legislation. We strongly support the proposed legislation and believe that it is an important step forward in formulating an enlightened comprehensive Arctic policy. However, we believe that not specifically providing for the input and participation of the Inupiat in the legislative language is a serious omission.

Before I identify our specific concerns of H.R. 2292, I would like to emphasize that we have been working closely with all of the entities in the Arctic, both governmental and private, in formulating and refining our positions expressed in this testimony.

The Ukpeagvik Inupiat Corporation both concurs with and endorses the testimony presented by North Slope Borough Mayor Eugene Brower and the members of his panel. We also endorse the participation and input of the Inuit Circumpolar Conference. We strongly suggest that at any future hearings concerning the Arctic and its development, that a representative from the Inupiat Community of the Arctic Slope [ICAS] be invited to present testimony. ICAS is the federally chartered tribal organization representing the Inupiat of the North Slope of Alaska.

The first page of the legislation on H.R. 2292 states in two separate places that the objective of this bill, and I quote, is "To provide comprehensive national policy dealing with national needs and objectives in the Arctic." Further in the text, the act is referred to as the "Arctic Research and Policy Act of 1983," and reads, "that there is an immediate need to formulate a comprehensive national policy to organize and fund currently neglected scientific research with respect to the Arctic."

Mr. Chairman and members of the committee, we contend that this proposed legislation neither deals specifically with national Arctic policy, nor provides mechanisms for formulation of such policy. The language of H.R. 2292 is both ambiguous and inconsistent with respect to formulating a comprehensive national policy on the Arctic.

The language of the bill could be construed to mean that we are discussing merely the formation of a national research policy. If it is the intent of the proposed legislation to limit itself specifically to the formation of a research policy, then this intent should be made explicit in the language of the legislation. It should not refer to a "comprehensive national policy dealing with the Arctic."

If, on the other hand, the formulation of a comprehensive national policy is the major objective of this legislation, then that should be elaborated and expounded upon.

Recent dramatic increases in significant developments in the Arctic relating to both national and international issues and interests underscore the critical need for a comprehensive national policy dealing with the Arctic. The issues and interests relate to national defense, jurisdictional disputes, environmental issues, resources and energy development, as well as societal exploitation or disruption. In the presence of such significant issues relative to the status and prospective uses of the Arctic, a comprehensive arctic policy seems to be of paramount importance.

There is an extensive list of areas which should be encompassed in policy formulation. These areas are all interrelated. These interrelationships underscore the need for a comprehensive and interdisciplinary policy process, which would then provide the guidelines and direction for arctic research. This coordination of arctic research should not be limited to Federal agencies. On the contrary, mechanisms should be created to insure, encourage, foster, and develop the genuine participation in and coordination with the Inupuit—the true Arctic residents, as well as the State of Alaska.

In reality there is no institutionalized process for coordination of U.S. Arctic policy. In 1971, the President established the ineffectual Interagency Arctic Policy Group to develop and "oversee the implementation of U.S. policy and to review and coordinate U.S. activities and programs." However, in the past 5 to 8 years when a number of significant decisions needed to be made concerning the Arctic, there has been for all practical purposes no functioning comprehensive arctic policy planning process.

We believe that the interrelationships among issues of national defense, foreign relations, resource development, energy management, environmental, and societal protection, and so forth, demand an informed interdisciplinary review process based on a comprehensive, enlightened, and consistent arctic policy. It is this policy which would provide for the foundation and coordination for the needed research in the Arctic. Even the "Study of the U.S. Arctic Research Laboratory" mandated by section 1007 of Public Law 96-437 concluded that:

> Because of the combination of accelerating information needs with the high costs of conducting Arctic research . . . that a policy-directed, tightly coordinated, Arctic research program could yield significant benefits in the national interest.

It is essential to develop this comprehensive arctic policy while achieving the greatest economic benefits for the existing communities of the Arctic with the least cultural, social, and political disruption possible. At the same time, it is essential to keep in reasonable balance environmental issues and national defense needs.

Both the North Slope Borough and UIC deem it necessary that scientific research efforts catch up to and overtake development activities so that potentially devastating real world problems can be foreseen, addressed, and resolved before irreparable harm is done to our land, our environment, our subsistence resources and ultimately to our culture.

The bill establishes an Arctic Research Commission which provides for membership of "Arctic residents." This language neither insures that there will be genuine participation of the Inupiat people, nor even provides for that involvement. Any potential participation of North Slope residents is further neutralized by the definition of "the Arctic".

We are cognizant of the fact that there is no singularly acceptable definition used to delineate the boundaries of the Arctic. According to the Central Intelligence Agency's Polar Region's Atlas:

> Perhaps the most favored Arctic boundary is the 10 degree C surface air isotherm for the warmest month (July). This isotherm coincides roughly with the most visible natural boundary—the tree line, which defines the northern limit of trees and the start of the treeless tundra.

That definition is more accurate and acceptable than the definition proposed in this legislation.

If this bill is designed to deal with the Arctic, it should be so limited. The definition used in this legislation includes not only the Arctic region of Alaska, but also the Bering Sea and the Aleutian Chain. The use of this all encompassing definition dilutes both the intent and effectiveness of the proposed legislation. We believe that special interests concerned with energy resource and commercial fishery development in sub-Arctic Alaska will seize upon this broadened definition of "Arctic" to use the limited research funds available for studies that will have no relevancy and offer no benefits to the Arctic.

I would like to comment on the funding of $25 million which is intended for the operation of this bill.

We consider this $25 million to be ridiculously small, when you take into consideration that the proposed demolition of the NARL facility is estimated to be between $10 and $20 million to destroy something.

Also, consider the fact what the Federal Government spends in the Antarctic in 1 year. May we suggest, as was suggested in the original Senate version, that conceivably a small portion of the revenues derived from Federal leasing offshore and onshore in the Arctic as well as in NPRA, could be set aside in some sort of special trust fund for this purpose.

My last comment, by the way, is that high school students in Barrow, Alaska, last year, built an igloo as a way of preserving their cultural heritage.

Thank you, Mr. Chairman, for this opportunity.

[The prepared statement of Robert Harcharek follows:]

Ukpeaġvik Iñupiat Corporation

TESTIMONY OF THE UKPEAĠVIK IÑUPIAT CORPORATION

By R. C. Harcharek, Ph.D.
Director of Technical Assistance

Before The

U.S. House of Representatives
Subcommittee on Science, Research and Technology

on H.R. 2292

The Arctic Research and Policy Act of 1983

28 June 1983

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Mr. Chairman and members of the Committee on Science, Research and Technology, I would like to thank you for the opportunity to provide testimony on the proposed Arctic Research and Policy Act of 1983 (H.R. 2292). My name is Robert Harcharek, and I am a multidisciplinary social scientist and educator. Barrow, Alaska is home for me and my family.

As Director of Technical Assistance of the Ukpeagvik Inupiat Corporation (UIC), and a member of the North Slope Borough Mayor's Task Force on National Policy Concerns, I am charged with the responsibility of providing objective analysis of issues impacting upon the shareholders of our corporation and the residents of the North Slope. We have closely followed the developments of the Arctic Research and Policy Act since it was first introduced in the Senate by Senators Murkowski, Stevens and Jackson.

The Ukpeagvik Inupiat Corporation is the Alaska Native Claims Settlement Act (ANCSA) Village Corporation for the Inupiat (Eskimo) people of Barrow, Alaska. With over 2,000 shareholders, UIC is the largest village corporation on the North Slope of Alaska and one of the largest in the entire state. Its shareholders account for approximately 54 percent of the total Native population of the United States Arctic. UIC has extensive land holdings in and around Barrow, including lands surrounding the Naval Arctic Research Laboratory.

Our concerns with the quality of life and the future of the Arctic and our people are real. These concerns with the preservation of our culture and our subsistence lifestyle are intimately woven into our corporate philosophy, which permeates and gives substance to all of our development activities. UIC has assumed an active role in monitoring and developing federal policies with regard to activities in the Arctic Slope Region of Alaska. Our commitment and involvement as a village corporation in the preservation of these values is strengthened by Congressional mandate. In the enactment of ANCSA legislation, many of the responsibilities assigned to the village corporations are based on the theory that the village corporation may be able to maintain the opportunity for a subsistence way of life for some of its members [See H.R. Ref. No. 92-746, Congress, 1st session 37 (1971)]

We commend the sponsors of this legislation for taking the initiative of bringing these matters of critical importance to your attention. We have, for a long time, recognized the need for a coherent, comprehensive Arctic scientific research policy for the United States. The formulation of such a policy has been long overdue, and is needed as expediently as possible. The rationale substantiating our position is based in part on the following:

1. Our national goals relating to defense, as well as resource exploration and extraction in the Arctic, impact directly on our culture and the fragile environment in which we live. If, by reason of these accelerated development activities, substantial environmental consequences are suffered, it will not be the United States government, nor the oil or mining companies, nor

the people of the lower 48 states who will bear the brunt of the consequences of this development. Rather, it will be the Inupiat people of the Arctic who will bear the burden. Since the stakes involve the very cultural existence of the Eskimo, there is no room for error. Nor is there any such thing as a second chance.

Today in the Arctic, we have an extensive and accelerated expansion of the industrial complex with all of its advantages, problems and tensions. Exploitation of physical resources overcome most other considerations. In the Arctic, major energy resource development decisions have already been made. National interests and goals will continue to dominate resource development decision making. We are cognizant of these political realities; ①

2. Most Arctic research has been fragmented, sporadic and largely mission oriented. It has been undertaken by a diversity of federal agencies - Departments of Agriculture, Commerce, Defense, Interior, Transportation, Health, Education and Welfare, the National Science Foundation, National Aeronautics and Space Administration and the Environmental Protection Agency. The research has been conducted under a maze of congressional statutes and executive orders. Very rarely were these research projects coordinated or the results disseminated. There is an urgent need for coordination of research and the dissemination of research findings. In this absence of coordination and dissemination, unnecessary and costly duplication has occurred.

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A comprehensive Arctic Research Policy would provide for a wholesome supportive exchange of ideas and data, both within and without the academic and governmental arenas. The importance of the coordination, accessibility and dissemination of data cannot be over emphasized;

3. A mechanism to facilitate international cooperation among Circumpolar nations must be created since much of the impact of development activities impacts across national borders. In this area would be problems, for example, related to Arctic haze. Barrow has no industrial activity, but it has an air pollution level nearly one-third of peak levels recorded in heavy industrial areas of the contiguous 48 states and Europe.(2) Also impacting upon other Circumpolar nations would be research relating to under ice and under sea exploration and mining development, as well as transportation of extracted resources;

4. Due to the proliferation and acceleration of nuclear armaments, an enlightened Arctic Policy would be instrumental in establishing a nuclear free zone in the Arctic. The importance of this concept is of critical concern to the residents of the Arctic who are cognizant of the devastating implications;

5. While physical impact research has been emphasized by the federal government, even the General Accounting Office (GAO) Report to the Congress of 17 June 1982 emphasized that biological and societal impact research is not adequate.] For example,

examination of fish, wildlife, and societal and economic disruptions from changes in subsistence and other life patterns is suffering from lack of long-term research design, planning and fiscal commitment. In addition, there is no long-range research planning on the structure and dynamics of Western Arctic caribou populations, fisheries or Native subsistence patterns.

The danger is especially great because the subsistence lifestyle of the Inupiat depends on the maintenance of poorly understood natural systems, which are both sensitive to change and slow to recover. Because of the dearth of governmental or corporate research in this area, the North Slope Borough, itself, has taken the lead in coordinating and funding the environmental research necessary in protecting the Arctic wildlife and the fragile habitat;

6. The Naval Arctic Research Laboratory (NARL) is in danger of being dismantled in the near future. The Navy has been soliciting proposals for the dismantling of NARL with a cost estimate between $10-20 million. A study of United States Arctic Research Policy and the possible roles of the Naval Arctic Research Laboratory was mandated by Section 1007 of Public Law 96-487. The study was completed at considerable cost to the taxpayer, but apparently nothing definitive resulted from it. To even consider dismantling NARL, before genuinely assessing future options for the facility or its potential role in light of Arctic Policy developments seems to verge on the ridiculous; and

7. Conspicuous by its near absence has been research associated with alternative energy sources having possible application for Arctic use, as well as domestic consumption and possible export potential.

It was because of these concerns that we supported the introduction of the original Senate version of this legislation (S. 1562) on 31 July 1981.

That original legislation struck a proper balance between the need for Arctic research geared toward national defense and resource development, while recognizing the need to preserve and protect our cultural values and subsistence lifestyle. We were extremely pleased that the original legislation expressly provided for genuine consultation with, and input from, the Inupiat in the decision making process with respect to Arctic research objectives and policy.

We are dismayed, however, that the subsequent Senate versions and the current House version of this legislation no longer strike this balance. All reference to the Inupiat and their concerns have been deleted from the present Senate and House versions. Those deletions were extensive. Instead, the bill can now be construed to be a thinly disguised vehicle for research activities designed to promote the commercial exploitation of Alaska's energy and wildlife resources and national defense activities with apparently little regard for the impacts of these activities on the residents of the Arctic. For comparative purposes, I have attached to my statement a copy of the original legislative language of S.1562.

Please do not misunderstand our criticism of the legislation. We strongly support the proposed legislation and believe that it is an important step forward in formulating an enlightened comprehensive Arctic Policy. However, we believe that not specifically providing for the input and participation of the Inupiat in the legislative language is a serious omission. It is our contention that the legislative language must specifically include consultation with the Inupiat, the indigenous people of the American Arctic. Our knowledge should be utilized, and our lives and needs should be an integral part of Arctic Research Policy. The language of the proposed legislation does not specifically provide for that involvement and participation, nor is there any mention of the specific concerns of the Inupiat or Alaskan Native peoples. From our perspective, we consider these omissions to be unacceptable.

Finally, before I identify our specific concerns of H.R. 2292, I would like to emphasize that we have been working closely with all of the entities in the Arctic, both governmental and private, in formulating and refining our positions expressed in this testimony. The Ukpeagvik Inupiat Corporation both concurs with and endorses the testimony presented by North Slope Borough Mayor Eugene Brower and the members of his panel. We also endorse the participation and input of the Inuit Circumpolar Conference.

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Our specific concerns, criticisms and recommendations relating to H.R. 2292 include the following:

The first page of the legislation on H.R. 2292 states in two separate places that the objective of this bill, and I quote, is "To provide comprehensive national policy dealing with national needs and objectives in the Arctic." Further in the text, the Act is referred to as the "Arctic Research and Policy Act of 1983," and reads, "that there is an immediate need to formulate a comprehensive national policy to organize and fund currently neglected scientific research with respect to the Arctic."

Mr. Chairman and members of the Committee, we contend that this proposed legislation neither deals specifically with national Arctic policy, nor provides mechanisms for formulation of such policy. The language of H.R. 2292 is both ambiguous and inconsistent with respect to formulating a comprehensive national policy on the Arctic.

The language of the bill could be construed to mean that we are discussing merely the formation of a national research policy. If it is the intent of the proposed legislation to limit itself specifically to the formation of a research policy, then this intent should be made explicit in the language of the legislation. It should not refer to a "comprehensive national policy dealing with the Arctic."

If, on the other hand, the formulation of a comprehensive national policy is the major objective of this legislation, then that should be elaborated and expounded upon.

Recent dramatic increases in significant developments in the Arctic relating to both national and international issues and interests underscore the critical need for a comprehensive national policy dealing with the Arctic. The issues and interests relate to national defense, jurisdictional disputes, environmental issues, resource and energy development, as well as societal exploitation or disruption. In the presence of such significant issues relative to the status and prospective uses of the Arctic, a comprehensive Arctic policy seems to be of paramount importance.

~~That~~ There is an extensive list of areas which should be encompassed in policy formulation. These areas are all interrelated. These interrelationships underscore the need for a comprehensive and interdisciplinary policy process, which would then provide the guidelines and direction for Arctic research. This coordination of Arctic research should not be limited to Federal agencies. On the contrary, mechanisms should be created to insure, encourage, foster and develop the genuine participation in and coordination with the Inupiat - the true Arctic residents, as well as the State of Alaska.

In reality there is no institutionalized process for coordination of United States Arctic policy. In 1971, the President established the ~~now-defunct~~ Interagency Arctic Policy Group to develop and "oversee the implementation of U.S. policy and to review and coordinate U.S. activities and programs." However, In the past five to eight years when a number of significant decisions needed to be made concerning the Arctic, there has been for all practical purposes no functioning comprehensive Arctic policy planning process.

We believe that the interrelationships among issues of national defense, foreign relations, resource development, energy management, environmental and societal protection, etc. demand an informed interdisciplinary review process based on a comprehensive, enlightened and consistent Arctic policy. It is this policy which would provide the foundation and coordination for the needed research in the Arctic. Even the "Study of the United States Arctic Research Laboratory" mandated by Section 1007 of Public Law 96-437 concluded that "Because of the combination of accelerating information needs with the high costs of conducting Arctic research...that a policy-directed, tightly coordinated, Arctic research program could yield significant benefits in the national interest."

It is essential to develop this comprehensive Arctic policy while achieving the greatest economic benefits for the existing communities of the Arctic with the least cultural, social and political disruption possible. At the same time, it is essential to keep in reasonable balance environmental issues and national defense needs.

Sec. 2 - Findings and Purpose: This section of the original version of S. 1562 included numerous references to the Native Culture, management of fish and wildlife resources and Native contributions to Arctic research efforts [see Sec. 2 (a), (3), (6), (7), (8) of the original bill]. Every one of these references has been deleted in the amended versions of the Senate Bill. They are also not included in the proposed legislation before this committee (H.R. 2292). We believe that these omissions seriously weaken the scope and potential impact of this legislation. Even the recently published Report to the Congress on Developing Alaska Energy Resources underscores our position. It reads, "present research efforts are inadequate to evaluate energy-related impacts...[such as] societal impacts, including the curtailment or disruption of Native subsistence hunting and fishing..." Instead, the current legislation now focuses on matters such as the commercial exploitation of the Arctic's fisheries resources [see Sec. 2(a)3]. There is no reference to the protection of fish and game or the Native culture. We question both the reason for and the implications of these omissions.

Sec. 2.(a)(12) states that "there is an immediate need to formulate a comprehensive national policy to organize and fund currently neglected scientific research with respect to the Arctic." May we suggest that, conceivably, a small portion of the revenues derived from Federal leasing of offshore and onshore lands on the North Slope could be set aside in a special trust fund for this purpose.

Sec. 4 - Duties of Council: Sec. 4.(a)(1) states that the Council shall "facilitate cooperation between the Federal Government and State and local governments with respect to Arctic research." We suggest that this section should also include local entities with potential research capabilities, such as the Ukpeagvik Inupiat Corporation, etc.

We also strongly suggest that this section should be expanded to include language that would require the Arctic Research Council to solicit the recommendations of, among others, the Native community with respect to Arctic research priorities; keep track of research activities which might impact on the environment or people of the Arctic; and seek to minimize adverse impacts of development.

[Both the North Slope Borough and UIC deem it necessary that scientific research efforts catch up to and overtake development activities so that potentially devastating real world problems can be foreseen, addressed and resolved before irreparable harm is done to our land, our environment, our subsistence resources and ultimately to our culture.] For example, I would like to cite a report on "Coastal Processes, Erosion and Morphology In the Vicinity of Arco West Dock" prepared by Dr. A. S. Naidu and dated 5 August 1981. This report discusses in detail specific instances of what transpires when careful planning and research are not conducted before a development project begins. For the convenience of the Committee, I have attached a copy of this report to my statement.

Sec. 4.(a)(2) discusses the coordination and promotion of international cooperation. We recommend that this be expanded to specifically involve the participation of the Inuit Circumpolar Conference.

Concerning Sec. 4(a)(3) we believe that the specific mechanisms for developing and supervising the activities should be articulated. How is this to be accomplished? With whom? What, if any, would be the involvement of the Arctic residents?

Sec. 6 - Arctic Research Commission: The bill establishes an Arctic Research Commission which provides for membership of "Arctic residents". This language neither insures that there will be genuine participation of the Inupiat people, nor even provides for that involvement. Any potential participation of North Slope residents is further neutralized by the definition of "the Arctic", which will be discussed later in this testimony. We suggest that the language be changed to read similarly to that in the original version of S. 1562). This change is significant and would insure genuine participation of the Inupiat residents.

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Sec. 7.(a).(2) - Duties of Commission: This establishes a data collection and retrieval center for Arctic research and promulgate guidelines for the use and dissemination of Arctic research information. May we suggest that the language of this section be written to specify that the Commission should assess all existing facilities were this data is now stored. This would include libraries, museums and information centers, such as the Arctic Environmental Information Data Center of the University of Alaska, and the Commission on History, Language and Culture of the North Slope Borough. Also, it would be necessary to find mechanisms for the dissemination of this data.

Sec. 7 (b).(1).(B): We are puzzled by this language. Is the Commission's Annual Report to be a public document? If so, why should it not be made widely available to the interested public? This language suggests that, conceivably, only a few copies would be available at the Commission's office, or a similar repository.

Sec. 10.(d).(1): Arctic Research Fund: This section proposes a funding level of $25 million dollars for each of the fiscal years. Is the fiscal year ending September 30, 1987 not to be funded? The proposed funding level of $25 million is ridiculously small when you take into consideration that the proposed demolition of the Naval Arctic Research Laboratory is estimated to be between $10-20 million. Also, consider the fact that the Federal Geovernment budget for Antarctic research is approximately $67 million.

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Sec. 11. - Definition of Arctic: We are cognizant of the fact that there is no singularly acceptable definition used to delineate the boundaries of the Arctic. Among the more common boundary criteria used to define the Arctic are the Arctic Circle, the tree line, and the limits of sea-ice coverage and perennially frozen ground or permafrost. An ecological definition would define the Arctic as those regions lying north of the ultimate extension of the forest and pole-ward of the tree line. According to the Central Intellignece Agency's Polar Region's Atlas, "Perhaps the most favored Arctic boundary is the 10°C surface air isotherm for the warmest month (July). This isotherm coincides roughly with the most visible natural boundary - the tree line, which defines the northern limit of trees and the start of the treeless tundra." That definition is more accurate and acceptable than the definition proposed in this legislation.

If this bill is designed to deal with the Arctic, it should be so limited. The definition used in this legislation includes not only the Arctic region of Alaska, but also the Bering Sea and the Aleutian Chain. The use of this all encompassing definition dilutes both the intent and effectiveness of the proposed legislation. We believe that special interests concerned with energy resource and commercial fishery development in sub-Arctic Alaska will seize upon this broadened definition of "Arctic" to use the limited research funds available for studies that will have no relevancy and offer no benefits to the Arctic. (3)

Thank you, Mr. Chairman, for the opportunity to provide testimony to your committee. I would be pleased to respond to any questions.

97TH CONGRESS
1ST SESSION

S. 1562

To provide comprehensive national policy dealing with national needs and objectives in the Arctic.

IN THE SENATE OF THE UNITED STATES

JULY 31 (legislative day, JULY 8), 1981

Mr. MURKOWSKI (for himself, Mr. STEVENS, and Mr. JACKSON) introduced the following bill; which was read twice and referred to the Committee on Governmental Affairs

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A BILL

To provide comprehensive national policy dealing with national needs and objectives in the Arctic.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Arctic Research and Policy Act of 1981".

FINDINGS AND PURPOSE

SEC. 2. (a) The Congress finds that—

(1) the Alaskan Arctic, onshore and offshore, contains vital energy resources which can reduce our dependence on foreign oil and improve our trade balance;

(2) the Arctic represents our only common border with the Soviet Union and is critical to our national defense;

(3) the Alaskan Arctic provides essential habitat for marine mammals, migratory waterfowl, and other forms of wildlife which are important to the Nation and which are essential to the subsistence culture of Alaska Natives;

(4) the pace and scale of developmental activities and resource development projects in the Arctic—the United States, Canada, and the Soviet Union—is accelerating in response to the resource needs of the Arctic-rim nations;

(5) resource development projects that are either currently underway in or proposed for the Alaskan Arctic include—

(A) offshore petroleum development in the Beaufort Sea;

(B) the Alaska natural gas transportation system;

(C) a proposed natural gas liquids pipeline;

(D) scheduled lease sales onshore in the National Petroleum Reserve—Alaska;

(E) exploration of the Arctic National Wildlife Range;

(F) development of icebreaking tankers to move oil from offshore areas to the United States;

(G) other Arctic-rim countries and Japan; and

(H) proposed development of Arctic coal reserves;

(6) Arctic research to date has been fragmented and has been accorded far too low a priority, whether measured in terms of energy resources, wildlife habitat, or national security;

(7) there is a need to better organize the Federal effort in Arctic research and coordinate this effort with ongoing State programs, university projects, and efforts by private industry and indigenous Native communities; and

(8) a coordinated Arctic research policy is critical to our national defense, to the timely development of essential natural resources in the Arctic, and to the responsible management of fish and wildlife resources.

(b) It is the purpose of this Act to recognize the importance of the Arctic to our national security and to our economic well-being, and to ensure that needless delay, unnecessary conflict, and significant economic losses that could result from the absence of an adequate Arctic research program do not occur. Therefore, the objectives of this Act are to—

(1) direct the administration of a coordinated Arctic research policy in which important basic and applied research issues will be addressed in a timely fashion;

(2) provide an information system through which the results of nonproprietary Arctic research carried out by Federal and State governments, universities, and the private sector are made accessible to the public in order to prevent inadvertent duplication of research;

(3) make the results of such research available to private industry, State governments, and local communities that are also conducting research on or are impacted by Arctic development;

(4) foster international cooperation among Arctic-rim nations, where appropriate, in the development and exchange of scientific information and technology;

(5) accelerate, where appropriate, the pace of basic and applied Arctic research so that needed resource development can take place on a timely basis and in accordance with national needs;

(6) establish the means for providing the financial support necessary to conduct needed applied and basic research; and

(7) establish an institutional framework to assure the achievement of these objectives.

ARCTIC RESEARCH COUNCIL

SEC. 3. (a) There is established the Arctic Research Council (hereinafter referred to as the "Council") which shall be composed of the Secretary of the Interior, who shall serve as the Chairman of the Council, the Secretary of Defense, and the Secretary of Commerce. The Governor of the State of Alaska may serve as an ex officio member of the Council. The Administrator of the National Oceanic and Atmospheric Administration, the Director of the Smithsonian Institution, and the Director of the National Science Foundation may attend meetings of the Council as observers.

(b) The Chairman of the Council shall request the heads of other Federal agencies to participate with the Council when matters affecting their responsibilities are considered by the Council.

DUTIES OF COUNCIL

SEC. 4. The Council shall coordinate a comprehensive Arctic research policy. To carry out this function, the Council shall—

(1) establish a clearinghouse for all Arctic research that has been conducted by the Federal Government. Each executive department or agency of the Federal Government shall provide annually to the Council copies of all studies or reports completed by that department or agency, or on its behalf, related to research on the Arctic. The Council shall compile a comprehensive list and index to all such studies and reports, and shall, to the extent permitted by Federal law, make the studies and reports, as well as the index thereto, available to the public;

(2) request each executive department or agency of the Federal Government to keep the Council currently informed of all ongoing studies, reports, or research projects undertaken by that department or agency, or on its behalf, concerning Arctic research;

(3) establish, on an annual basis, after soliciting the views of affected Federal agencies, the State of Alaska, the Native community and private industry, priorities for research activities based on national needs and ongoing activities;

(4) direct each executive department or agency of the Federal Government to prepare a report, within six months of the date of enactment of this Act, which contains—

(A) a list of all responsibilities or activities of the respective department or agency that may impact the Arctic environment or the residents of the North Slope of Alaska; and

(B) a description of the steps, including research, that the department or agency has taken or is planning to take to ensure that its activities or the activities of others for which it is responsible are undertaken in a manner that minimizes, to the maximum extent practicable, any adverse impacts on the Arctic environment and residents;

(5) determine, upon the completion of the study mandated in section 1007 of the Alaska National Interest Lands Conservation Act (16 U.S.C. 3147), whether the Naval Arctic Research Laboratory should be maintained to house and coordinate substantive research projects or for such other purposes as the Council deems appropriate. If the Council determines that the Naval Arctic Research Laboratory should be maintained, the Council—

(A) may delegate to or contract with any Federal department or agency, the State of Alaska, the North Slope Borough, or the State of Alaska university system to administer the activities of the Naval Arctic Research Laboratory; and

(B) shall permit any Federal department or agency, the State of Alaska, the North Slope Borough, public and private schools and universities, and the private sector to utilize the facilities of the Laboratory, provided that each user of the facilities shall pay to the Council all costs reasonably associated with its use of those facilities;

(6) manage the Arctic Research Fund established pursuant to section 6 of this Act;

(7) coordinate, after consultation with the Secretary of State and in conjunction with his offices, exchanges of information about the Arctic on an international basis; and

(8) report to Congress annually on the activities pursued by the Council.

ADVISORY COMMITTEE

SEC. 5. The Chairman of the Council shall establish an advisory committee comprised of—

(1) scientists with credentials in Arctic research;

(2) representatives of private enterprise active in the Arctic; and

(3) representatives of Native residents of the North Slope of Alaska;

whose views shall be sought and considered in the establishment of priorities for Arctic research activities.

ARCTIC RESEARCH FUND

SEC. 6. (a)(1) There is established an Arctic Research Fund into which there shall be paid 1 per centum of all revenues received by the Federal Government from disposition by sale or lease of any interest in the Outer Continental Shelf located off the coast of the North Slope of Alaska and in lands on the North Slope of Alaska. The Arctic Research Fund shall support the activities of the Arctic Research Council and, if the Council determines that the Naval Arctic Research Laboratory should be maintained, the operating and maintenance costs of and the research activities conducted at the Naval Arctic Research Laboratory.

(2) No more than $25,000,000 shall be paid into the Arctic Research Fund in any one year and the total amount of money in the fund at any one time shall not exceed $50,000,000.

(b)(1) With regard to those Arctic research projects identified by an executive department or agency pursuant to section 4(2) of this Act and the responsibilities identified by an executive department or agency pursuant to section 4(4) of this Act, the respective executive department or agency shall maintain the responsibility to fund the projects it has so identified.

(2) If an executive department or agency administers a permitting program for exploration or development activities

or transportation of energy resources, that department or agency shall, where authorized by other Federal law, require the applicant to conduct or fund specific Arctic research as is necessary to assure that the activity is accomplished in a manner designed to minimize its impact on the Arctic environment and the Native people of the North Slope of Alaska.

(c) Pending the accrual of funds in the Arctic Research Fund to a level sufficient to support the Arctic research mission established by this Act and the operating and maintenance costs at the Naval Arctic Research Laboratory, the Secretary of Defense shall provide the funding necessary to maintain the Naval Arctic Research Laboratory, unless the Council determines pursuant to section 4(5) of this Act that the Laboratory should no longer be maintained. Such funds shall be forthcoming from the various services based in Alaska and such other discretionary funds that the Secretary of Defense has available without regard to restrictions in previous authorization or appropriations Acts.

DEFINITION; NONAPPLICABILITY OF THE NATIONAL ENVIRONMENTAL POLICY ACT

SEC. 7. (a) For purposes of this Act, "North Slope of Alaska" means all United States territory, offshore and onshore, north of 68 degrees north latitude.

(b) The National Environmental Policy Act of 1969 (83 Stat. 852) shall not be construed, in whole or in part, as requiring the preparation or submission of an environmental impact statement by the Arctic Research Council or the Secretary of Defense for any activities conducted pursuant to the provisions of this Act.

○

GENE KENNEDY
DIRECTOR

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COASTAL PROCESSES, EROSION AND MORPHOLOGY IN THE VICINITY OF ARCO WEST DOCK

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GENERAL DESCRIPTION OF THE AREA

The area of investigation is specifically the Beaufort Sea coastline in the vicinity of ARCO West Dock; however, data presented herein are also derived from studies done along the entire arctic coastline, but primarily in the area between Oliktok Point and the Sagavanirktok River (Figure 1).

The area includes Simpson Lagoon and the offshore islands of the Jones and Return Groups. The barrier island-lagoon system covers an area of roughly 240 km^2, about 60 km long by about 4 km wide. The lagoon is very shallow, generally less than 1 or 2 m (Tucker and Burrell, 1977) but may be as deep as 6 m in channels (Mungall et al., 1978).

The offshore islands are of two types, those with a thick tundra mat overlying unconsolidated clastics and ice, and those without tundra mat covers, consisting mainly of sand and gravel. The tundra covered islands, although linear in overall morphology, tend to have long straight beaches that intersect at acute angles. The gravel islands are curvilinear, long and narrow.

The relief of the islands and the inland coastal plain, as classified by Hartwell (1973), are low (less than 2 m) and moderate (from 2 to 5 m). The mainland coast and the tundra covered islands terminate abruptly at the lagoon as a steep bluff with unconsolidated talus (Hartwell, 1973) and slumped tundra mat lying on a generally narrow beach. Often, in areas of moderate relief, clear ice is visible in the bluff, underlying the sediments or tundra mat.

Spit development is common on both the gravel and tundra islands. Spits forming off the western ends of the tundra covered islands are

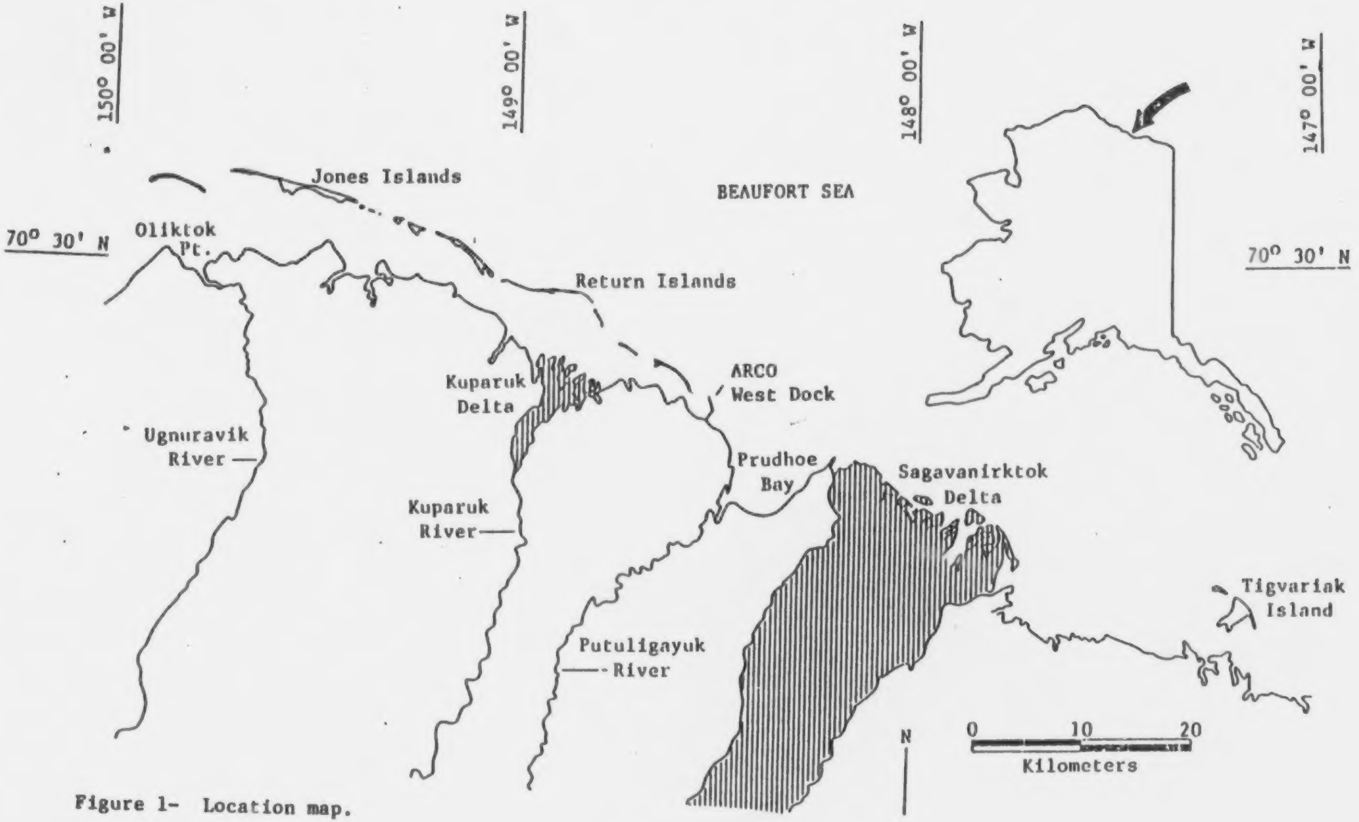

150° 00' W
149° 00' W
148° 00' W
147° 00' W
70° 30' N
70° 30' N
Jones Islands
BEAUFORT SEA
Oliktok Pt.
Return Islands
Kuparuk Delta
ARCO West Dock
Ugnuravik River
Prudhoe Bay
Sagavanirktok Delta
Kuparuk River
Putuligayuk River
Tigvariak Island
N
0
10
20
Kilometers

Figure 1- Location map.

generally straight and often develop connective bars between the islands. Spits forming on the more isolated islands tend to be recurved and occur as multiples, most often pointing westward.

Polygonal ground patterns are common on the tundra covered islands and the coastal plain. Talik lakes occur in the depressions between the ice wedge polygons, often enlarging by coalescence. The lakes, which number in the thousands, tend to be elongated and oriented in a northwest - southeast direction. Maximum lengths of the coastal plain lakes in this area are about 4 km. Depths are usually a meter or less, but may exceed 6 m (Black and Barksdale, 1949).

Two major rivers, the Sagavanirktok on the east and the Colville on the west, bound the area inland from the barrier island-lagoon system. The Kuparuk is the only large river that empties directly into Simpson Lagoon. All three of the major rivers are braided and have delta systems.

EROSION AND COASTAL PROCESSES

Erosion along the Beaufort Sea coast occurs during the summer months, in late June through early October, but especially in August and September (Lewellen, 1977; Hopkins and Hartz, 1978a) when large storms are most frequent. During the rest of the year erosion is negligible because the coastal bluffs are frozen, as is the sea. In some areas it is possible that at sea-ice breakup in June some sediments or blocks of the coastal plain that are associated with shore-fast ice are detached and transported. Erosion occurs primarily by thawing of the coastal bluff sediments and constituent ice and downslope slumping of the thawed sediments. Mudslumps may occur where there is considerable thawing of ground ice. McDonald and Lewis (1973) cited over 10 m of headwall retreat in a mudslump on the Yukon Coastal Plain over a one-year period.

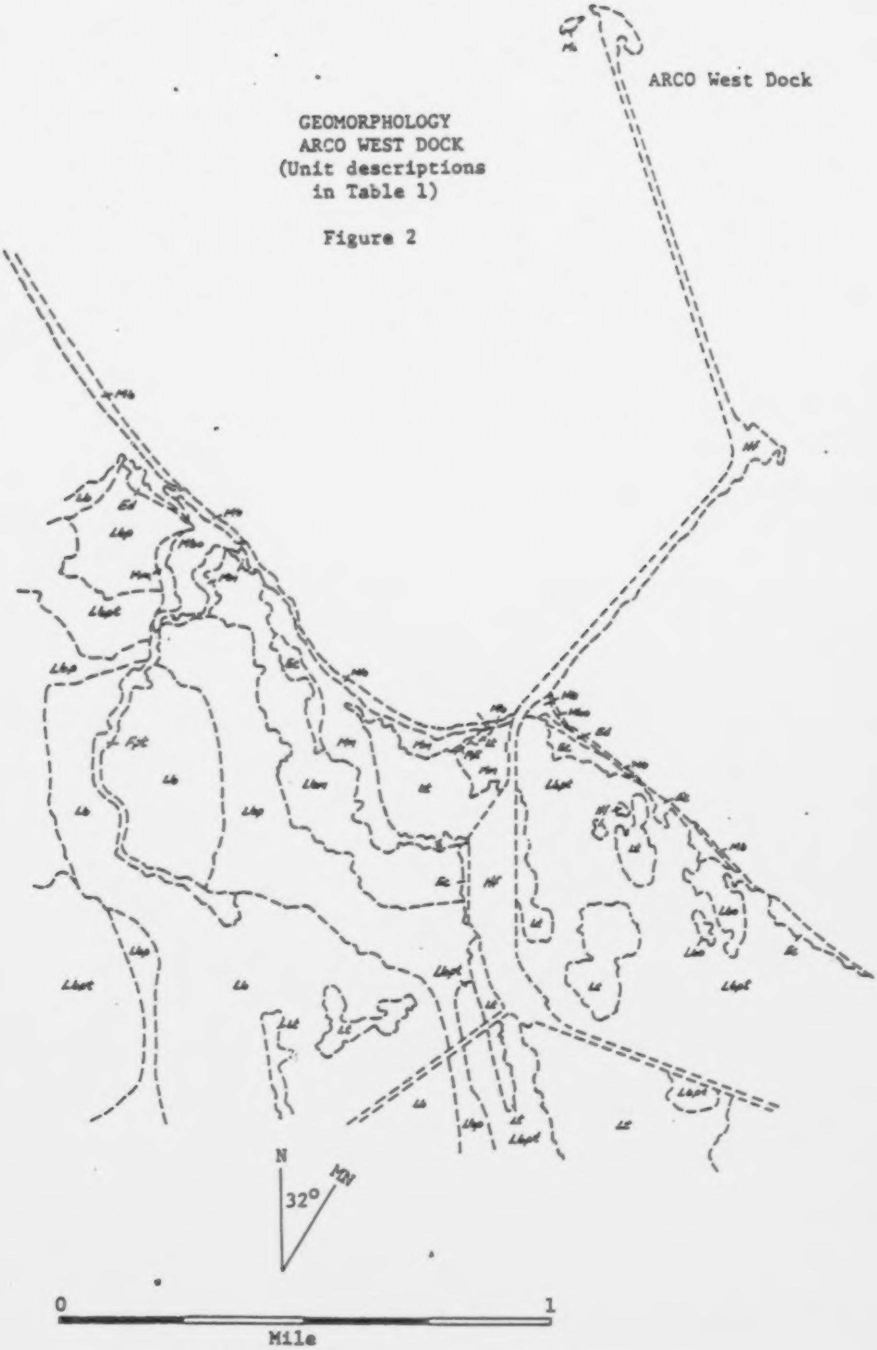
Ice-shoved ridges are observed primarily on the offshore island beaches, but also along the mainland, and result from blocks or sheets of ice being pushed upon the beach primarily during storms. This process is not restricted to the summer months. Most ice-shoved ridges occur near shore and are commonly about 0.6 m high. These are usually destroyed annually. However, Hume and Schalk (1964) cited an observed ice advance of 43 m at Barrow, Alaska in 1961. Deposits pushed far inland may persist for several years. Ice shove is responsible for the depositing beach gravels on top of the inland tundra in the vicinity of Prudhoe Bay.

The coastal bluffs are either faced by a generally narrow beach or decend directly into the sea. Erosion is greatest in the latter case because the impact of waves is constant resulting in considerable thawing and undercutting; the depth of water is also important in this case: erosion increases with depth (Hopkins and Hartz, 1978a). Because of this thawing and undercutting large blocks of the coastal plain detach along planes of weakness at ice-wedges and slump into the sea where they quickly erode (Hopkins and Hartz, 1978a). The presence of a beach slows erosion and in some cases the rate of erosion is directly related to the width of the beach, i.e., the wider the beach, the slower the erosion (Cannon and Rawlinson, 1978).

It is stressed that erosion along the Beaufort Sea coast does not occur at an even rate, but primarily during large storms. These storms are common in August and September, because the Arctic Slope weather during these months is dominated by cyclonic low pressure systems (Hartz, 1978;

Walker et al., 1980). Reflecting the cyclonic low pressure systems, the wind during storms is generally from the west or southwest (Hartz, 1978; Leavitt, 1978; Mungall et al., 1978). Consequently storm waves and surge, which may reach 3.0 to 3.5 m above the normal level (Hume and Schalk, 1967; Reimnitz and Maurer, 1978), are also generally from the west. Winds from the east generally lower sea level and limit strong wave action on the coast because the waves break offshore (Grider et al., 1978). Mungall et al. (1978) attributed this set-down to sea level sloping southward in geostrophic balance with Coriolis forces. The tidal range along the Beaufort Sea coast is normally very low. Hume and Schalk (1967) cited a daily variation of about 0.15 m with an additional monthly variation of about 0.13 m at Barrow, Alaska, and Mungall et al. (1978) cited an August tidal range in the eastern part of Simpson Lagoon of 0.23 m. Because during storms the wind, waves and surge are from the west, west-facing shorelines generally erode faster than east-facing shorelines (Hopkins, personal comm., 1977). Further, erosion is usually very rapid at points of land (Hopkins and Hartz, 1978a). However, points of land generally persist in the same area, and coastal morphology does not vary greatly for many tens of years (Lewellen, 1977). During storms the constant impact of waves on bluffs that decend directly into the sea is increased, but also, thawed sediments and somewhat protective slumped tundra-mat accumulating on beaches at the base of some bluffs are removed allowing thawing, undercutting and slumping of these usually protected bluffs.

The topography and landforms besides beaches, such as lake basins, also control the rate of erosion (Cannon and Rawlinson, 1978). These factors, including the aspect (direction the bluff faces), influence erosion in the vicinity of Point McIntyre and the ARCO West Dock (Figure 2; Table 1).


ARCO West Dock
N
32°
MN
0
1
Mile
Scale- 1:18,000

GEOMORPHOLOGY
ARCO WEST DOCK
(Unit descriptions
in Table 1)

Figure 2

Table 1- Geomorphology map unit descriptions.

FLUVIAL DEPOSITS (F)

Fpt- Fluvial, thaw floodplain deposits - chiefly silt and fine sand, with small amounts of gravel and organic matter; active layer to 1 m; continuously frozen; moss and grass vegetation; subject to infrequent inundation; floodplain widening results primarily from thaw.

MARINE DEPOSITS (M)

Mc- Marine, coastal plain deposits - chiefly silt and fine sand, with small amounts of gravel and organic matter; active layer to 1 m; continuously frozen; moderate to high ice content; tundra vegetation; no apparent modification.

Mb- Marine, beach deposits - chiefly fine sand, with some silt and organic matter along mainland coastal plain deposits (Mc) and well-sorted medium to coarse sand and gravel on offshore islands; no vegetation; perennially unfrozen; subject to frequent inundation by storm surge; longshore transport and seasonal ice shove.

Mm- Marine, saltmarsh deposits - chiefly fine sand and silt with organic matter; subject to frequent inundation by marine storm surge; grass and moss vegetation, is commonly dead from salt; active layer to 2 m; continuously frozen; generally occur where lacustrine basin deposits (Lb, all variations) are breached by the sea.

Mi- Marine, island deposits - chiefly medium to coarse sand and gravel of the offshore barrier islands; no vegetation; perennially unfrozen; subject to longshore transport; frequent inundation by storm surge and seasonal ice shove.

Mbo- Marine, organic beach deposits - chiefly finely divided organic matter with some silt. Derived from erosion of Mc deposits.

LACUSTRINE DEPOSITS (L)

Lt- Lake, thaw - shallow lake formed by thawing of ground ice; lacustrine silt and organic matter over Mc deposits; thaw bulb below lake; frozen at depth; depth of thaw bulb depends on size of lake.

Table 1- continued.

Lbo-	Lacustrine basin, organic deposits - chiefly mixed organic matter and silt, organic matter dominate near surface; perennially flooded if basin is closed, otherwise not perennially flooded; aquatic vegetation where flooded, otherwise only sparse vegetation; active layer to 2 m where flooded, otherwise to 1 m; continuously frozen; little to no ground ice.
Lb-	Lacustrine basin deposits - chiefly silt and fine sand and some organic matter of recently drained basins; overlie Mc deposits; gravel at depth; basin bottoms are featureless except for some remnant ice-wedge polygons; active layer to about 1 m; little or no ground ice depending on the size of the basin - small basins may have some ice preserved, no ice in large basins; permafrost table is unchanged or elevated since drainage of the basin.
Lbpt-	Lacustrine basin deposits with polygonal ground and thaw ponds - chiefly silt, fine sand, and some organic matter one to several meters thick of drained lake basins; overlie Mc deposits; gravel at depth; distinct polygonal ground and numerous small thaw ponds; tundra vegetation; continuously frozen; no thaw bulb; high ground ice content; high, active layer to 1 m; poor drainage.
Lbp-	Lacustrine basin deposits with polygonal ground - chiefly silt, fine sand, and some organic matter one to several meters thick, of drained lake basins, overlie Mc deposits, gravel at depth; distinct polygonal ground; tundra vegetation; no thaw bulb; massive ground ice content moderate to high; active layer to 1 m; fair drainage.
Lbm-	Lacustrine basin marsh deposits - chiefly silt, fine sand and some organic matter one to several meters thick of drained lake basins; overlie Mc deposits; gravel at depth; numerous low-center polygons and coalescing, shallow thaw ponds; aquatic vegetation; flooded seasonally; no thaw bulb; high ground ice content; active layer to 1 m; very poor drainage.

EOLIAN DEPOSITS (E)

Ed-	Eolian, dune deposits - fine and medium sand of active dunes; dry frozen; sand derived chiefly from Mb deposits; little or no vegetation, grass and brush where present.
Ec-	Eolian, cover deposits - fine and medium sand; dry frozen; sand derived chiefly from Mb or Ed deposits; little or no vegetation, grass and low brush where present.

FILL DEPOSITS (H)

Hf-	Fill deposits - sand and gravel brought in by man.

Updike and Howland (1979) mapped the surficial geology and reported on geologic processes in the vicinity of the Prudhoe Bay oilfield.

Coastal erosion along the Beaufort Sea averages about 1 m/yr along the Canadian coast, about 1.6 m/yr from the U.S. - Canada border to Point Oliktok (Figure 1), and 4.7 m/yr from Harrison Bay to Barrow (Table 2; Hopkins and Hartz, 1978a). Short-term erosion may often be great; Lewellen (1977) reported up to 30 m/yr at Drew Point and Cape Simpson.

EROSION MEASUREMENTS

For this report erosion was measured along the Beaufort Sea coast in the vicinity of Point McIntyre and the ARCO West Dock (Figure 3). Erosion values herein are metric to conform with most published literature. Nine measurements of the total erosion over a 25 year period were made along the coast by comparing a 1955 vertical aerial photograph, enlarged to a scale of 1:17,644, with 1980 vertical aerial photographs taken at a scale of 1:18,386. The total erosion at each locality was divided by 25 to give the mean annual erosion. The annual mean does not necessarily reflect the actual erosion per year because the erosion rate is not constant; it does enable prediction of the amount of erosion for various periods of time. Appendix A explains the measurement procedures and the error evaluation.

The measurements most pertinent to this study are numbers 6 through 9 (Figure 3). Measurement 6 indicates insignificant change along the coastline for at least 1.2 km and probably for about 1.7 km southeastward from Point McIntyre.

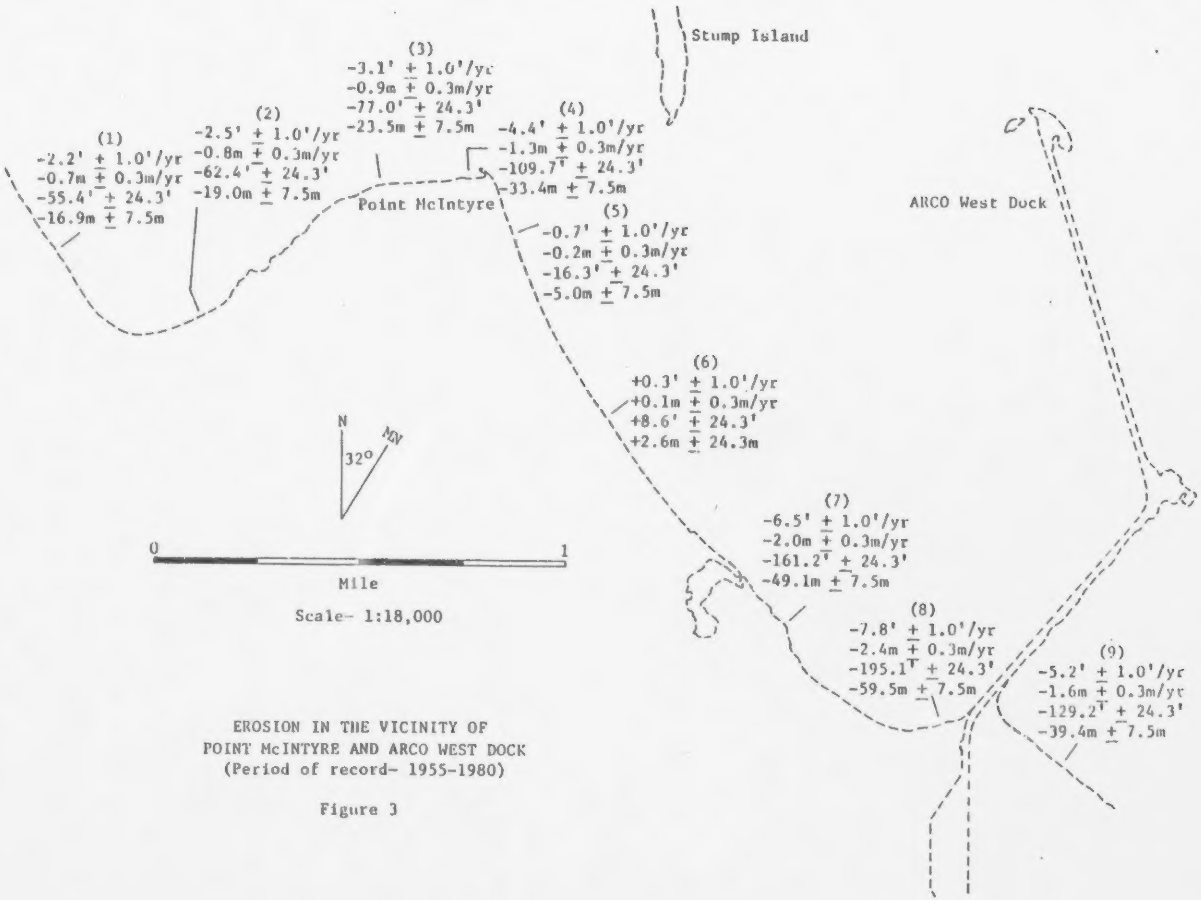
Erosion of 49.1 m ± 7.5 m at measurement locality 7 and 59.5 m ± 7.5 m at measurement locality 8 reflect the influence that topography, landforms

Table 2- Rates of coastal retreat (from Hopkins and Hartz, 1978b, pg. 525-526).

Section of Coastline	Composition of Bluffs	Average Yearly Rate of Retreat (M)	Source of Information
Point Barrow to Iko Bay	Quaternary marine silts and fine sand, overlain by thaw lake deposits (Williams and Carter, 1977).	2.1 3.3 2.2 2.5	MacCarthy, 1953 Hume & Schalk, 1972 Lewellen, 1977 Hartz, in press
Iko Bay to Admiralty Bay		3.1 3.0	Lewellen, 1977 Hartz, in press
Admiralty Bay to Cape Simpson		30.0 (Cape Simpson only) 4.6 4.3	Leffingwell, 1919 Lewellen, 1977 Hartz, in press
Cape Simpson to Pitt Point		30.0 (Drew Pt. only) 12.0 11.4	Leffingwell, 1919 Lewellen, 1977 Hartz, in press
Pitt Point to Cape Halkett		12.0 11.4	Lewellen, 1977 Hartz, in press
Cape Halkett to Kogru River		3.2	Hartz, in press
Kogru River to Oliktok Point	Quaternary marine silts and fine sands + Quaternary eolian sands + Quaternary alluvium, overlain by thaw lake deposits.	2.0	Hartz, unpub. data
Oliktok Point to Beechey Point	Quaternary marine silts and fine sands. Overlain by thaw lake deposits.	1.4 1.6	Dygas and others, 1972 Lewellen, 1977
Beechey Point to Point McIntyre	Quaternary marine silts and fine sands + Quaternary Flaxman Formation + Quaternary alluvium. Overlain by thaw lake deposits.	1.0 1.0	Barnes and Reimnitz, 1977 Lewellen, 1977
Point McIntyre to Heald Point	Quaternary alluvium and Quaternary Flaxman Formation. Overlain by thaw lake deposits.	2.0 1.7	Barnes & Reimnitz, 1977 Lewellen, 1977
Heald Point to Tigvariak Island		< 3.0	Hartz, unpub. data
Tigvariak Island to Point Thomson		2.0	Hartz, unpub. data

Table 2- continued.

Section of Coastline	Composition of Bluffs	Average Yearly Rate of Retreat (M)	Source of Information
Point Thomson to Brownlow Point	Quaternary alluvium and Quaternary Flaxman Formation. Overlain by thaw lake deposits.	9.0 (Brownlow Pt. only)	Leffingwell, 1919
		6.8 (2 data points)	Lewellen, 1977
		3.5	Hartz, unpub. data
Flaxman Island	Quaternary Flaxman Formation. Overlain by thaw lake deposits.	9.2	Leffingwell, 1919
		3.5	Lewellen, 1970
Brownlow Point to Camden Bay	Quaternary alluvium and Quaternary Flaxman Formation. Overlain by thaw lake deposits.	1.6	Lewellen, 1977
Camden Bay to Demarcation Point		1.5	Lewellen, 1977
Demarcation Point to Mackenzie Bay	Quaternary alluvium silts, sands, and gravels.	±2.5	MacKay, 1963

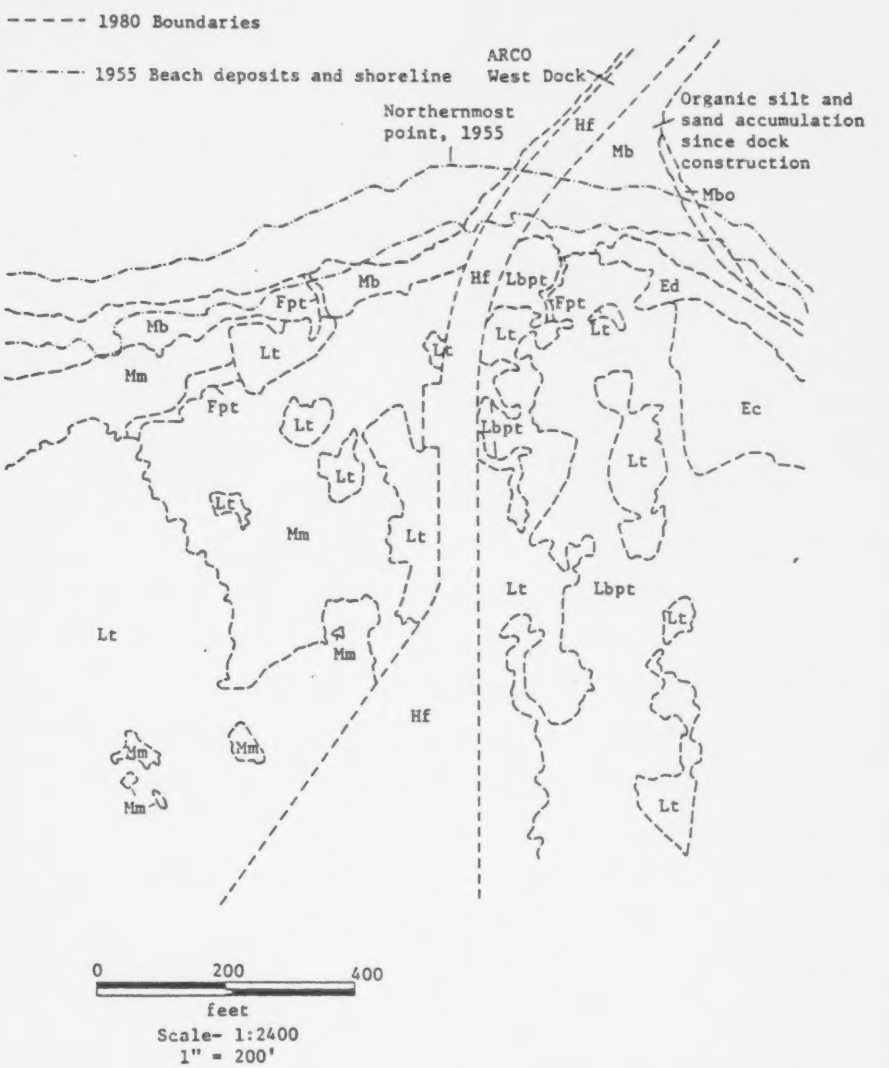

Stump Island
ARCO West Dock
Point McIntyre
(1)
-2.2' ± 1.0'/yr
-0.7m ± 0.3m/yr
-55.4' ± 24.3'
-16.9m ± 7.5m
(2)
-2.5' ± 1.0'/yr
-0.8m ± 0.3m/yr
-62.4' ± 24.3'
-19.0m ± 7.5m
(3)
-3.1' ± 1.0'/yr
-0.9m ± 0.3m/yr
-77.0' ± 24.3'
-23.5m ± 7.5m
(4)
-4.4' ± 1.0'/yr
-1.3m ± 0.3m/yr
-109.7' ± 24.3'
-33.4m ± 7.5m
(5)
-0.7' ± 1.0'/yr
-0.2m ± 0.3m/yr
-16.3' ± 24.3'
-5.0m ± 7.5m
(6)
+0.3' ± 1.0'/yr
+0.1m ± 0.3m/yr
+8.6' ± 24.3'
+2.6m ± 24.3m
(7)
-6.5' ± 1.0'/yr
-2.0m ± 0.3m/yr
-161.2' ± 24.3'
-49.1m ± 7.5m
(8)
-7.8' ± 1.0'/yr
-2.4m ± 0.3m/yr
-195.1' ± 24.3'
-59.5m ± 7.5m
(9)
-5.2' ± 1.0'/yr
-1.6m ± 0.3m/yr
-129.2' ± 24.3'
-39.4m ± 7.5m
N
MN
32°
0
1
Mile
Scale- 1:18,000

EROSION IN THE VICINITY OF
POINT McINTYRE AND ARCO WEST DOCK
(Period of record- 1955-1980)

Figure 3

and aspect have on the amount and rate of erosion. These two measurement localities are within a particularly low lake basin that has been cut by coastal erosion (Figures 2 and 4). Storm surges commonly inundate part of this basin and form saltmarshes (Mm indicated in Figures 2 and 4). Inundation of these areas by seawater kills the vegetation and thaws the sediments making the saltmarshes highly susceptable to subsidence, further inundation and erosion. Recent photographs indicate coalescence of two spits to form a beach (Mb indicated in Figures 2 and 4) along the saltmarshes, and in-filling of the remaining part of the thaw lake (Lt indicated in Figures 2 and 4). Measurement 9 indicates that the coast east of ARCO West Dock is retreating at a rate equal to the average erosion rate for the coast between the U.S. - Canada border to Point Oliktok (1.6 m/yr).

The ARCO West Dock was built during the summer of 1974 and extended to its present length in 1975 - 1976. The dock has interrupted the normal westward transport of fine-grained sediment along the coast and about 1000 m^3/yr of sediment and peat are accumulating at the east base of the dock. This accumulation accounts for an advance of about 15 m since August, 1976 in the shoreline immediately adjacent to the dock (Grider et al., 1978). The longshore currents are primarily wind driven and are about 3% of wind velocity (Mungall et al., 1978). Leavitt (1978) cited wind velocities generally less than 0.5 knots (0.26 m/sec), which is consistent with 3% of the average ENE wind speed, through the Stump Island-ARCO West Dock entrance, and suggested that the effects of the dock on currents, at distances of 10 km or more, are minimal. Matthews (1978) cited average current velocities of 6 cm/sec, and during easterly strong winds, of 18 cm/sec.



1980 Boundaries
1955 Beach deposits and shoreline
ARCO West Dock
Northernmost point, 1955
Organic silt and sand accumulation since dock construction
Hf
Mb
Mbo
Lbpt
Fpt
Ed
Lt
Mm
Ec
Hf
Lt
Lbpt
Mm
Hf
0
200
400
feet
Scale- 1:2400
1" = 200'
N
32°
MN

GEOMORPHOLOGY AND EROSION AT ARCO WEST DOCK
BETWEEN JULY 1955 AND JULY 1980
(Unit descriptions in Table 1)

Figure 4

APPENDIX A

EROSION MEASUREMENT PROCEDURES AND ERROR EVALUATION

The accuracy of the erosion measurements is dependent upon several factors: distortion and resolution of the photographs, measuring techniques and resolution, and scale determinations; the latter is dependent on the former two. To minimize the effects of photograph distortion, the measurements were not taken too far toward the edge of the photograph where the distortion is greatest. The measuring technique was as follows:

1. Directly on each photograph, establish a line between two points identifiable on each photograph that perpendicularly intersects the beach.
2. Along the established lines, using a micrometer accurate to 0.001 in., measure the distance from a point on the 1955 photograph to the land-water boundary. Repeat each measurement 5 times and accept the mean.
3. Measure the distance along the same line, and from the same point used in the 1955 photograph, on the 1980 photograph. Repeat this measurement 5 times and accept the mean.
4. Determine the distance in feet for 1955 and 1980 by multiplying a scale-corrected conversion (see below).
5. Subtract the two distances to determine the total eroded or accreted. This total is then divided by 25 to obtain the annual erosion or accretion.
6. Convert the total and annual erosion to meters.

The scale and the scale-corrected distance conversions of the photographs were determined by comparison with a 1:24,000 scale U.S.

Geological Survey Orthophoto map. Lines were established between the same points identifiable on the map and the 1955 and 1980 photographs; the distances between the points on the photographs were measured along the lines with the micrometer and corrected to match the known distance on the map. Taking into account all the factors that contribute to error in the erosion measurements, the total erosion values given in Figure 3 may vary 24.3' (10.2 m) over the period between 1955 and 1980 or 1.0' (0.3 m) per year about the mean.

REFERENCES

Barnes, P.W., Reimnitz, E., Smith, G., and Melchior, J., 1977, Bathymetric and shoreline changes, northwestern Prudhoe Bay, Alaska: U.S. Geol. Survey open-file rept. 77-161, 10 p.

Black, Robert F. and Barksdale, William L., 1949, Oriented lakes of northern Alaska: Jour. of Geol., V. 57, pp. 108-118.

Cannon, P. Jan, and Rawlinson, Stuart E., 1978, The environmental geology and geomorphology of the barrier island-lagoon system along the Beaufort Sea coastal plain from Prudhoe Bay to the Colville River: 29th Annual Alaska Science Conference, Univ. of Alaska, Fairbanks, September 1978, proceedings.

Dygas, J.A., Tucker, R., and Burrell, D.C., 1972, Geologic report of the heavy minerals, sediment transport, and shoreline changes of the barrier islands and coast between Oliktok Point and Beechey Point, in Kinney, P.J., and others, eds., Baseline data study of the Alaskan Arctic aquatic environment: Univ. of Alaska Inst. Marine Sci. Rept. R-72-3, pp. 62-121.

Grider, G.W. Jr., Robilliard, G.A., and Firth, R.W. Jr., 1978, Environmental studies associated with the Prudhoe Bay dock: coastal processes and marine benthos. Final Rept., 1977: Woodward-Clyde Consultants.

Hartwell, Allen D., 1973, Classification and relief characteristics of northern Alaska's coastal zone: Arctic, V. 26, no. 3, pp. 244-252 (Sept.).

Hartz, R.W., 1978, Erosional hazards map of the Arctic coast of the National Petroleum Reserve - Alaska: U.S. Geol. Survey open-file rept. 78-406.

Hopkins, D.M., and Hartz, R.W., 1978a, Coastal morphology, coastal erosion and barrier islands of the Beaufort Sea, Alaska: U.S. Geol. Survey open-file rept. 78-1063.

______________________________, 1978b, Shoreline history of Chukchi and Beaufort Seas as an aid to predicting offshore permafrost conditions, FY 77 Annual Rept., OCSEAP, NOAA: 72 p.

Humes, J.D., and Schalk, M., 1964, The effects of ice-push on Arctic beaches: Amer. Jour. Sci., V. 262, pp. 267-273.

____________________________, 1967, Shoreline processes near Barrow, Alaska: a comparison of the normal and the catastrophic: Arctic, V. 20, pp. 86-103.

____________________________, and Hume, P.W., 1972, Short-term climate changes and coastal erosion, Barrow, Alaska: Arctic, V. 25, pp. 272-278.

Leavitt, E., 1978, Coastal meterology of the Alaskan Arctic coast, FY 77 Annual Rept., OCSEAP, NOAA: 26 p.

Leffingwell, E. DeK., 1919, The Canning River region, northern Alaska: U.S. Geol. Survey Prof. Paper 109, 251 p.

Lewellen, R.I., 1977, A study of Beaufort Sea coastal erosion, northern Alaska, FY 77 Annual Rept., OCSEAP, NOAA: 35 p.

MacCarthy, G.R., 1953, Recent changes in the shoreline near Point Barrow, Alaska: Arctic, V. 6, pp. 44-51.

MacKay, J.R., 1963, Notes on the shoreline recessions along the coast of the Yukon Territory: Arctic, V. 16, pp. 195-197.

Matthews, J., 1978, Characterization of the nearshore hydrodynamics of an Arctic barrier island-lagoon system, FY 77 Annual Rept., OCSEAP, NOAA: 21 p.

McDonald, B.C., and Lewis, C.P., 1973, Geomorphic and sedimentologic processes of rivers and coasts, Yukon Coastal Plain: Task Force on northern oil development, Rept. 73-79, Information Canada cat. no. R72-12193, 245 p.

Mungall, J.C.H., Hann, R.W. Jr., Horne, D.J., Whitaker, R.E., and Abel, C.E., 1978, Oceanographic processes in a Beaufort Sea barrier island -lagoon system: numerical modeling and current measurements, FY 77 Annual Rept., OCSEAP, NOAA: 99 p.

Reimnitz, E., and Maurer, D.K., 1978, Storm surges in the Alaskan Beaufort Sea: U.S. Geol. Survey open-file rept. 78-593.

Tucker, Robert W., and Burrell, D.C., 1977, The sedimentary environment of a lagoon on the Beaufort Sea coast of Alaska: Marine Sci. Comm., 3(2), Inst. Mar. Sci., Univ. of Alaska, Fairbanks, pp. 93-116.

Updike, R.G., and Howland, M.D., 1979, Surficial geology and processes, Prudhoe Bay oil field, Alaska, with hydrologic implications: Special Rept. 16, Div. Geol. Geophys. Surveys, Anchorage, 6 p. + 17 plates.

Walker, D.A., Everett, K.R., Webber, P.J., and Brown, J., 1980, Geobotanical atlas of the Prudhoe Bay region, Alaska: CRREL Rept. 80-14, 69 p.

Mr. MacKay. I think I understand what you are saying.

Mr. Brown.

Mr. Brown. Mr. Chairman and members of the subcommittee.

I appreciate the opportunity to testify before the Subcommittee on the Arctic Research and Policy Act of 1983 (H.R. 2292).

Our organizations support passage of H.R. 2292 because of the authorization it contains for additional appropriations of up to $25 million for arctic research (Sec. 19(d)(1)).

Increased U.S. funding of arctic research is particularly timely because of the great damage that energy development activities can work on fragile arctic ecosystems and the people who depend on them. Nevertheless, we believe that H.R. 2292 is an awkward vehicle for increasing arctic research and should be revised extensively.

Establishing H.R. 2292's "Arctic Science Policy Council" and "Arctic Research Commission" may distort basic arctic research, reduce the efficiency of applied research, and promote political controversy more than science. Travel and payroll for members and staff alone would consume hundreds of thousands of dollars that could otherwise be spent on needed studies.

Research is conceived in efforts to expand basic scientific knowledge or is intended to answer questions relevant to implementation or adoption of particular societal policies. Funding of basic scientific research concerning the Arctic should be judged competitively by scientists who are attuned to the subtleties of the fields involved. Such review can assign priority to areas considered fertile or can address the merits of individual grant proposals. No policy in the sense of serving specific or immediate needs of society is necesssary or appropriate. The quality of basic research, and its long-term value for society, in fact may depend heavily on its independence from the urgencies of Government. The National Science Foundation funds, I understand, some $7 million of basic arctic research and chooses projects on the basis of independent review by scientific peers. NSF's system works well. Indeed, the best way to enhance the U.S. commitment to basic scientific research concerning the Arctic is to appropriate more money to NSF for this purpose.

Federal funding of applied science in the Arctic should be tailored to implementation or development of specific national and international policies, such as those on environmental protection. National policies for the environment are principally contained in legislation such as the National Environmental Policy Act, Clean Water Act, Clean Air Act, Coastal Zone Management Act, Outer Continental Shelf Lands Act, and the Endangered Species Act. International policies are set by various international agreements, including those on migratory birds, polar bears, and long-range air pollution. Responsibility for implementing these policies rests mainly with Federal agencies such as the Departments of the Interior, Commerce, Transportation, State, Defense, the Environmental Protection Agency, and ultimately with the President. The agencies responsible for administration of these statutes are also responsible for developing adequate factual bases for their actions and, if called upon, for explaining the information base to the Congress or the courts. Consequently, these agencies should have a leading role in determining what applied research the Congress should be asked to fund.

Federal agencies conducting applied research in the Arctic could coordinate better. Furthermore, these agencies are not always especially sophisticated in research planning. Applied arctic research could benefit from enactment of efficient mechanisms to force better coordination and to provide independent, objective, and expert review. *Unfortunately*, the Arctic Science Policy Council and Arctic Research Commission of H.R. 2292 probably would do neither. The Council would be comprised of five Presidential appointees. Four members would be required to have no more than some "knowledge and interest in the field of arctic research." The chairperson would not be required to have any arctic knowledge or interest concerning the Arctic. Federal agencies involved in arctic research only would play a role in the selection of two Council members. Yet the Council would "develop and supervise an integrated national Arctic science policy * * *." Section 4(1)(3).

The Arctic Research Commission would comprise nine members appointed by the Council: four scientists (at least one from the University of Alaska), two individuals "representative of the needs and interests of arctic residents," two individuals from private industry, and one employee of the Coast Guard. Section 6. A majority of the Commission members could be nonscientists completely unfamiliar with research in the Arctic or anywhere else. Nevertheless, this body would "determine priorities for future arctic research * * * establish a data collection and retrieval center * * * [and] make grants for such arctic research as the Commission deems necessary and desirable * * *." Section 7(a). In our opinion, enhanced coordination of applied research would be achieved better through procedures directly applicable to research planning by those Federal agencies with major arctic responsibilities.

On May 9, the State Department announced that President Reagan assigned priority attention to the arctic region. He directed the Interagency Arctic Policy Group [IAPG], reporting to the National Security Council, to review and coordinate U.S. arctic policy and U.S. international activities and programs in the Arctic. Purely domestic matters are not included in the IAPG's responsibilities as now constituted. A reasonable means to improve overall interagency coordination would be for Congress to make the IAPG responsible for domestic arctic matters in addition to international, to direct the IAPG to establish a research committee, and to direct the IAPG to submit an annual report to Congress on the nature and funding needs of U.S. activities and programs in the Arctic, including research.

Independent and expert review of the IAPG report could be accomplished by directing the existing Congressional Office of Technology Assessment, with input from the State of Alaska, local governmental representatives of the Inuit, scientists, environmentalists, and the public generally, to review the IAPG report annually and make its comments and recommendations available to this committee and the Committee on Appropriations. It also would be useful to engage the National Academy of Sciences in less frequent review of arctic research programs in general.

Besides institutional and procedural shortcomings, H.R. 2292 lacks proper perspective in its stated findings and purpose. The principal applied research needs in the Arctic concern conflicts between production and transport of energy and environmental protection for natural ecosystems and the Inuit who depend upon them. Satisfying these needs should be stated as the main purpose of this bill. Companies involved in exploration, production, or transport of oil or other minerals will invest the funds needed to accomplish their business. However, these companies should not be relied on to fund objective studies on environmental impact. Instead, the Government should play the leading role.

Thank you for the opportunity to testify on this important subject. If it would be useful, we will be pleased to provide the subcommittee with draft legislation that would implement our comments.

[The prepared statement of William Brown follows:]

TESTIMONY OF
DR. WILLIAM Y. BROWN
ENVIRONMENTAL DEFENSE FUND

BEFORE THE
SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY
HOUSE COMMITTEE ON SCIENCE AND TECHNOLOGY

JUNE 28, 1983

Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to testify before the Subcommittee on the Arctic Research and Policy Act of 1983 (H.R. 2292).

Our organizations support passage of H.R. 2292 because of the authorization it contains for additional appropriations of up to $25,000,000 for arctic research (Sec. 10(d)(1)). Increased U.S. funding of arctic research is particularly timely because of the great damage that energy development activities can work on fragile arctic ecosystems and the people who depend on them. Nevertheless, we believe that H.R. 2292 is an awkward vehicle for increasing arctic research and should be revised extensively.

Establishing H.R. 2292's "Arctic Science Policy Council" and "Arctic Research Commission" may distort basic arctic research, reduce the efficiency of applied research, and promote political controversy more than science. Travel and payroll for members and staff alone would consume hundreds of thousands of dollars that could otherwise be spent on needed studies.

Research is conceived in efforts to expand basic scientific knowledge or is intended to answer questions relevant to implementation or adoption of particular societal policies. Funding of basic scientific research concerning the Arctic should be judged competitively by scientists who are attuned to the subtleties of the fields involved. Such review can assign priority to areas considered fertile or can address the merits of individual grant proposals. No "policy" in the sense of serving specific or immediate needs of society is necessary or appropriate. The quality of basic research, and its long term value for society, in fact may depend heavily on its independence from the urgencies of government. The National Science Foundation funds ① some $7 million of basic arctic research and chooses projects on the basis of independent review by scientific "peers." NSF's system works well. Indeed, the best way to enhance the U.S. commitment to basic scientific research concerning the Arctic is to appropriate more money to NSF for this purpose.

Federal funding of applied science in the Arctic should be tailored to implementation or development of specific national and international policies, such as those on environmental protection. National policies for the environment are principally contained in legislation such as the National

Environmental Policy Act, Clean Water Act, Clean Air Act, Coastal Zone Management Act, Outer Continental Shelf Lands Act, and the Endangered Species Act. International policies are set by various international agreements, including those on migratory birds, polar bears, and long-range air pollution. Responsibility for implementing these policies rests mainly with federal agencies such as the Departments of Interior, Commerce, Transportation, State, Defense, the Environmental Protection Agency, and ultimately with the President. The agencies responsible for administration of these statutes are also responsible for developing adequate factual bases for their actions and, if called upon, for explaining the information base to the Congress or the Courts. Consequently, these agencies should have a leading role in determining what applied research the Congress should be asked to fund.

Federal agencies conducting applied research in the Arctic could coordinate better. Furthermore, these agencies are not always especially sophisticated in research planning. Applied arctic research could benefit from enactment of efficient mechanisms to force better coordination and to provide independent, objective, and expert review. Unfortunately, the Arctic Science Policy Council and Arctic Research Commission of H.R. 2292 probably would do neither. The Council would be comprised of five presidential appointees. Four members would be required to have no more than some "knowledge and interest in the field of Arctic research." The chairperson would not be required to have any arctic knowledge or interest concerning the Arctic. Federal agencies involved in arctic research only would play a role in the selection of two Council members. Yet the Council would "develop and supervise an integrated national Arctic science policy..." Sec. 4(1)(3).

The Arctic Research Commission would comprise nine members appointed by the Council: four scientists (at least one from the University of Alaska), two individuals "representative of the needs and interests of Arctic residents," two individuals from private industry, and one employee of the Coast Guard. Sec. 6. A majority of the Commission members could be non-scientists completely unfamiliar with research in the Arctic or anywhere else. Nevertheless, this body would "determine priorities for future Arctic research, ... establish a data collection and retrieval center...[and] make grants for such Arctic research as the Commission deems neccessary and desirable..." Sec. 7(a). In our opinion, enhanced coordination of applied research would be achieved better through procedures directly applicable to research planning by those federal agencies with major Arctic responsibilities.

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Arctic policy and U.S. international activities and programs in the Arctic. Purely domestic matters are not included in the IAPG's responsibilities as now constituted. A reasonable means to improve overall interagency coordination would be for Congress to make the IAPG responsible for domestic Arctic matters in addition to international, to direct the IAPG to establish a research committee, and to direct the IAPG to submit an annual report to Congress on the nature and funding needs of U.S. activities and programs in the Arctic, including research.

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Besides institutional and procedural shortcomings, H.R. 2292 lacks proper perspective in its stated findings and purpose. The principal applied research needs in the Arctic concern conflicts between production and transport of energy and environmental protection for natural ecosystems and the

Inuit who depend upon them. Satisfying these needs should be stated as the main purpose of this bill. Companies involved in exploration, production or transport of oil or other minerals will invest the funds needed to accomplish their business. However, these companies should not be relied on to fund objective studies on environmental impact. Instead, the government should play the leading role.

Thank you for the opportunity to testify on this important subject. If it would be useful, we will be pleased to provide the Subcommittee with draft legislation that would implement our comments.

BIOGRAPHICAL DATA OF WILLIAM YANCEY BROWN

Education

B.A. (Biology), with highest distinction, University of Virginia, 1969.
M.A.T., Johns Hopkins University, 1970.
Ph.D. (Zoology), University of Hawaii, 1973.
J.D., Harvard Law School, 1977.

Employment

July 1981 to present: Senior Scientist, Environmental Defense Fund, Inc., Washington, D.C.

February 1980 to July 1981: Executive Secretary, International Convention Advisory Commission, Washington, D.C.

July 1977-February 1980: Executive Secretary, Endangered Species Scientific Authority, Washington D.C.

June 1976-June 1977: Consultant, U.S. Fish and Wildlife Service, Washington, D.C.

September 1975-June 1976: Scientific Director, Monitor, Washington, D.C.

Summer 1975: Special Assistant to the Senior Scientist, Council on Environmental Quality, Washington, D.C.

Summer 1974: Biologist, Environmental Protection Agency, Washington, D.C.

1973-74: Assistant Professor of Biological Sciences, Mount Holyoke College, South Hadley, Mass.

1970-71: Teaching Assistant, Physiology and Anatomy, University of Hawaii, Honolulu, Hi.

1969: High School Teacher, Baltimore, Md.

Summer 1967: Department of State, A.I.D., Recife, Brazil.

Professional and honorary societies

American Association for the Advancement of Science.
Ecological Society of America.
American Ornithologists' Union.
Wilson Ornithological Society.
Phi Beta Kappa.
Sigma Xi.
Phi Sigma.
Member of the Bar: District of Columbia Court of Appeals, U.S. District Court for the District of Columbia; U.S. Court of Appeals for the District of Columbia.
Member: State Department Advisory Committee on Oceans and International Environmental and Scientific Affairs, Antarctic Section.

Publications

Many papers, notices and rulemakings.

Mr. MacKay. I would like to put those facts or statistics in the record again. They were mentioned this morning. Some of you may have missed them.

I think there is a good bit of misunderstanding there on arctic research, the actual research expenditures is $10 million, the logistic expenditure is 90, roughly, on arctic research, the National Science Foundation estimated that the total Federal effort is something in the order of $105 million, so the idea that there is no money being spent is probably not an accurate idea. The idea that it may be expended in ways that don't reflect priorities that would be said if there were more indigenous and local and environmental representation, I think, speaks for itself.

This has been very helpful testimony. I have some questions I would like to ask, which would help provide a complete record of this hearing and one of the issues, I would like to ask of all of the gentlemen who are here from the arctic Inuit population.

Which Federal agencies do you find responsive to the concerns of the local population and the environment and which do you find unresponsive?

Mr. Brower. Well, there are so many different agencies we deal with at different times. If you are talking about one specific issue, that would be one thing. Bowhead, we deal with NOAA, responsive in some areas, but one of the greatest concerns we have is the Bowhead Whale. Spending alot of money doing the research which the Federal Government should be entitled to. We are putting on to prove to the Federal Government and outside world that there is plenty of whales out there. That is one.

Mr. MacKay. You are saying that out of lack of anyone else being concerned with the Bowhead Whale, your borough has actually funded some research?

Mr. Brower. Yes, we are doing massive research study on the Bowhead, ice, air, digestive track, at different universities here. A massive front to go to the Alaska frontier, the Arctic for the sake of international energy needs.

Why don't they do the same amount of studies on protecting the environment and people that are involved around that area, because they are going to be there for years to come.

Mr. MacKay. So your testimony, then, would be that it is not possible to generalize and say which agencies are and which agencies are not responsive?

Mr. Brower. That is right.

Mr. MacKay. It goes from issue to issue?

Mr. Brower. It would be a 1-on-1 basis on different issues.

Mr. MacKay. Dr. Harcharek.

Mr. Harcharek. The only thing I could add to that is the fact that I support Mayor Brower's statement and on the whole I cannot identify an agency which has cooperated in very many ways.

On the issue-to-issue basis, for example, our corporation, because we cannot find a sensitive ear, is looking for private funding to do research studies, trying to identify carcinogens in the Arctic because the incidence of cancer in our people is rapidly increasing in the past 10 to 12 years. It is a type of cancer that hits various age groups as well as various parts of the anatomy. This is the type of activity that I feel should be funded nationally instead of having to go locally.

Other than that point, probably speaking on the Department of the Interior, does a lot of research in the Arctic, but, most of the research is the same. It seems to be the same things repeated over and over again as is with many of the other agencies, and it is just stored and there is very little action taken on the results of any of the research done.

Mr. ROSING. Well, Mr. Chairman, as you know, I am from Greenland, I live in Greenland. I am a citizen, so I could start talking about the Danish Goverment agencies, but I don't think it would be very appropriate here. I know very little of the American Federal agencies.

Mr. MACKAY. I might go back to a previous question that I asked and that was, to your knowledge, how do other goverments establish their research policies in the polar area and what use do they make of a commission and that sort of thing? Do you have any knowledge of that, Mr. Rosing?

Mr. ROSING. Well, as for other governments bordering the Arctic Ocean, the country I know most of is Denmark and very little research is being done from Denmark and is being funded by the Danish Government. The most research in Scandanavia is being performed by Norway, Polar Institute has been mentioned, and Sweden as well and other countries as France, Switzerland, are very active in arctic research, science activity research. I think out of the three countries that I represent, Canada, Alaska, Greenland, plus Denmark, I think the United States is the most active country of those three.

Very briefly, I could elaborate more on that, but out of the countries that I have the most knowledge of, I think first prize goes to the States, second prize to Canada and no prize at all maybe to Denmark and third prize.

Mr. MACKAY. All right.

I guess the comment that was made by Mr. Brower of the lack of or ambiquity in the way the bill handles the question of policy would be that you all would share that view of it. It would almost seem to me that the Congress ought to set forth some policy guidelines or else ask that there be advisory statement of policy.

Have any of you given any thought to what such a policy would sound like?

Mr. BROWER. That is a pretty loaded question.

Mr. MACKAY. Well, I can ask you perhaps to give us your suggestion in written form.

Mr. BROWER. I can't quite pick some of the words.

Mr. MACKAY. I am saying it would not be necessary that when I hit you for questions like that, that I ask for immediate answers. I could ask you to give some thoughts and perhaps give us some suggestions of what such a policy would be like.

Mr. ANDERSON. You will have an answer soon. I am the mayor's assistant. I think we have given that some thought, in fact, which will be reflected in our written detailed comment from the mayor to the committee.

Basically, our suggestions are for an articulate policy to first of all provide for a mechanism to establish a comprehensive articulate policy which includes more than the natural sciences, which includes policies on arctic connection, on arctic resource development, on arctic health concerns, and arctic sociocultural matters.

Mr. MacKay. I would assume that the conference you were describing, Mr. Rosing has as one of its objectives trying to develop wording for a polar policy, polar development policy.

Mr. Rosing. Yes, that is true, as I mentioned in my testimony, we are having a general assembly coming up in 4 weeks from now in Canada and the overall objective of the polar conference is develop an arctic comprehensive arctic policy not only related to science, but all aspects of life in the Arctic, and with your permission, Mr. Chairman, to our question about arctic science and in other countries, maybe I could ask Michael Maxwell from the McGill University to elaborate a bit on that.

Mr. MacKay. Dean Maxwell.

Let the record reflect that you are not related to Mr. Paul Maxwell, our adviser.

Mr. Maxwell. Only very distantly, I suppose, Mr. Chairman.

Thank you, Mr. Chairman.

I am the dean of the faculty of arts at McGill University, and last year, the North Slope Borough endowed a chair in northern studies at McGill. The establishment of this chair will take place over a period of 5 years and during that 5 years, northern research will be supported through the income from endowment.

I don't want to pretend to be an expert on northern research in Canada. I think that has already emerged in this hearing. That there is no central organization in Canada to maintain northern research, but there is research going on in a number of unversities, including McGill. McGill, I may say, has been doing research on the North, I think, from at least the 1880's and has very long tradition in that respect.

One of the interesting developments that has taken place recently is the growing awareness of the need for research in the North in the Arctic in the areas of the social sciences and not simply the physican hard sciences.

Reflecting this, one of the purposes to which the endowment money will be applied is in establishment of a documentation center at McGill in order to keep track of the arctic policies across the world. It is probably not well known, that, for instance, Argentina has an arctic policy or at least an arctic policy and a number of countries around the world have such policies, and it will be one of our aims to establish this type of information, gather it all in one place.

There is also a need to bring together the research that is being done in medicine in the Arctic, there again McGill is doing work in that area.

Mr. MacKay. Thank you.

Mr. Brown.

Mr. Brown. I suppose in the first instance, I would caution the committee about the value of a sweeping all inclusive description of the policy of the United States concerning the Arctic. I am afraid you might find yourself in roughly the same position you would be in if you were trying to define policy for the Earth in a single bill.

I think that it is important to recognize that there are already a number of policies reflected in various statutes this Congress has passed which apply to the Arctic.

In respect to research, I do think at least certain general policies are possible. These are reflected in my testimony: For basic research, the peer review procedures of NSF are good and we should retain them. Directed research should address the needs of those agencies which are developing and implementing policies in the Arctic.

Those needs concern principally the conflict which is emerging at a high pace between energy production and transport and the protection of the environment and of the Inuit who depend on the environment. I do think that conflict should be priority in focussing research.

Thank you.

Mr. **MacKay**. Miss Mary Ann Bach, our minority counsel.

Ms. **Bach**. Mr. Brown, in your testimony, you mentioned specifically some of our environmental statutes and it is the first time that I recall anyone who has been here today actually naming some of those statutes. My questions for the panel: What is happening with the environmental statutes that we have on the books in terms of those being adhered to in Alaska? What is happening with the gas and oil companies? Are they adhering to them? What is the status of our NEPA documents that are coming out? Are they accurate? Do we have problems with those?

There are several themes that have been consistent in the testimony we received here. There are international problems that we have and that have to be addressed. There is national security, there is environmental policy and there is energy policy.

I would like to get some feedback on what is happening environmentally up in Alaska?

Mr. **Brown**. I will to answer with respect to one statute, then perhaps we can go down the table.

On December 22, 1982, the environmental defense fund, along with 15 other environmental groups, filed suit in U.S. District Court challenging regulations of the Army Corps of Engineers. The heart of that litigation is two so-called nationwide permits for discharge of dredged and fill materials into wetlands of the United States. Those two permits, among other things, authorize without limitation the discharge of dredged and fill material in some 8.5 million acres of tundra on the North Slope of Alaska. The Fish and Wildlife Servce has objected to those permits. It is clear that millions of cubic yards of tundra are going to be moved and there will be a great impact on the ecosystem and resident people.

Those permits were issued by the Corp of Engineers in July of 1982. The North Slope Borough has applied to intervene in the litigation on our side and many others have applied to intervene on the other side. For me, this is one of the clearest instances where this administration, through the Corps of Engineers, has taken steps that are very damaging to the environment and clearly illegal. The matter will be resolved in court once the judge who has our case takes action.

Mr. **Harcharek**. I would like to comment on part of that. I regret that I left a couple documents sitting on my desk in Barrow, but among them are some copies of pages from the Congressional Record of executive deletions by executive order based on financial considerations to streamline cost-efficiency.

For example, some of it being the Endangered Species Act because it did not provide funding to insure that the mechanism that was created by the act of Congress can be performed and there are pages of these deletions that relate directly to specifics in the Arctic, endangered species down to environmental conservation.

I could send you those as soon as I go back.

Mr. MacKay. Perhaps you could submit that to us for inclusion in the record of this hearing.

Mr. Harcharek. Yes, I can. I can send them back at the end of next week when I get back to Barrow.

[The information referred to is available for examination in the subcommittee files.]

Mr. MacKay. That would be very helpful. Would you care to comment, Mayor Brower?

Mr. Brower. Mr. Chairman, I might mention permit litigation to protect the tundra, once a permit is given by the corps, that is the end of the permit review part of the corps. Once they give the permit, it is forgotten. I don't think they go back and recheck to see if they are conforming to the permit requirement.

It happened more than once on the slope.

Also, because of a lack of Federal funding, that is one of the big questions that should be looked at also. Cut back on your funding. Some of these laws that are enacted by the Congress aren't being adhered to.

Ms. Bach. On the same line of questioning, do we have environmental problems with regard to other nations interacting with Alaska?

Mr. Brown. I think the clearest example of that is the problem of arctic haze which was referred to earlier. There are several recent studies indicating that sulfur dioxide and soot, in fact, is present over the Arctic at levels which are somewhat lower than the Northeast, but still the same order of magnitude. Furthermore, the impact of that pollution on the arctic environment may be greater than some other areas of the Earth.

Soot reduces the amount of sunlight and could raise the temperature of the Arctic. This might result in melting of the polar ice cap. Work by Kenneth Rahn and Glenn Shaw indicates that the origin of that pollution is European and probably Soviet—probably from powerplants in the central Soviet Union. The Soviets have not joined an ongoing international network of atmospheric scientists who are monitoring atmospheric pollution, and they haven't participated in or become a party to the new EEC long-range air pollution convention. I can't say I am all that optimistic they will ever become a party because they seem to hate the EEC so much on general grounds. Yet this massive air pollution problem probably has its origin mostly in one country, the Soviet Union.

Ms. Bach. The final question: You mentioned incidences of cancer increasing and you say it is widely distributed in the body. Can you elaborate a little bit further?

Mr. Harcharek. Yes, basically, incidences of cancer rate among Inuit people is increasing dramatically in the past 4 or 5 years.

You will find young people, old people, middle-age people, right down the line, coming down with various forms of cancer and this is starting to be a major concern because it just strikes. There have been hypothesis that has a lot to do with the food chain, possibly with the caribou they eat and residual things either from the pollution or has relationship to the atmosphere, highs and lows created because of geographical location and concentration of various pollutants in the air, at least that is one of the hypothesis of what causes it.

The number of people that have been coming down with cancer is staggering. We are looking into ways of funding that, at least the preliminary studies to get Federal funding or State funding or foundation funding in that area.

Mr. **MacKay**. The gentleman in the back of the room, if you will come up and identify yourself.

Mr. **Edwardson**. I am Charles Edwardson from Barrow, Alaska. The baseline research that AEC has done in the 1960's should be maintained. The Atomic Energy Commission has a pathology study on Barrow. This was done by AEC. This research should be maintained and what has happened in the Arctic is the radioactivity is electrocharged particles, so it is to go up so the amount of radiation from atmospheric tests from 1945 to 1968, the people who live in the Arctic from 62 degrees north in this period are susceptible to eight types of cancer and Dr. John Goffman from Livermore, former director of Livermore Laboratory, said that one of the things that we should do is to maintain that nuclear pathology study. So anybody who had lived in that period from 1948 to 1968, has the highest susceptibility to cancer.

Mr. **MacKay**. The gentleman—would you identify yourself?

Mr. **Spark**. Yes.

Mr. Chairman, my name is Harold Spark. I am presenting the Association of Village Council Presidents, an area of 18,000 Inuit Eskimos and approximately 800 miles south of Barrow. We are situated in the Yukon Delta and are comprised of 56 villages in that area. We are here in support of the presentation made by the mayor for the borough.

In reference to your question, in regard to policy, the statements by the State Department today and Mr. Brown on this panel, identified the fact that there is a segregation within planning for the Arctic right now between domestic and international concerns. We feel that is a significant problem. We feel that this is going on at a time when the U.S. support for basic research in the Arctic and particularly government sponsorship not only of basic research, but of supervision of industry activities, at least by this current administration, is being downgraded. We feel that at the time when the resource utilization by this Nation of the Arctic is increasing, that this bill is, well, is a need in order to refocus attention on what are our ultimate goals, particularly long-range problems.

The idea that you can have one phase of government concentrate on international issues, as Mr. Rosing said, we are dealing with an area that does not have blockage.

We need to identify through this Congress the goals of how the administration should approach the Arctic in the future. We have thought, as the borough has, on what we would believe to be ideal for an arctic policy and again that we are included within the 10 degrees and we will be submitting to this committee the ideas of our people.

Thank you, Mr. Chairman.

Mr. MACKAY. That is an excellent statement and I appreciate that.

It seems to me that Dr. Ostenso this morning said that no single agency has enough ownership of that problem to really be an effective advocate for the research needs in the Arctic. That was very helpful to me and it seems to me you all are supporting that and you are saying we would like to have our goals defined sufficiently, not necessarily tightly, but sufficiently so that we all are pretty much in agreement at least the direction we are going and who all would be involved in the evaluation and formulation of policy and research.

Does that kind of summarize your concerns?

Mr. BROWER. Yes.

Mr. HARCHAREK. Yes.

Mr. MACKAY. I want to express again on behalf of the subcommittee our appreciation for your making the effort to come here. I think your testimony has been excellent. I speak as one person who is and was in great need of information in this area and you have been very helpful. Thank you very much and we are adjourned.

[Whereupon, at 4:05 p.m., the subcommittee was adjourned.]

APPENDIX

Additional Statements Submitted for the Record

STATEMENT OF
AMERICAN PUBLIC HEALTH ASSOCIATION

Problems of conducting research in the Arctic are formidable. Distances are vast, the climate harsh and inhospitable, communications uncertain, logistics expensive, and experienced Arctic researchers few in number. Yet, the need for effective, efficient and productive Arctic research has never been greater. Increasing development of Alaska's natural resources, increasing recognition of Alaska's strategic importance to the Nation's defense, and increasing human population brought about by rapid development and exploitation of Alaska's resources have resulted in recognition of the unique opportunities to solve problems impeding achievement of national goals in the Arctic through scientific research.

Large amounts of Arctic research are being conducted and funded by the federal government and by the private sector. Over the last twenty-five years, there has been a growing recognition that the most significant social, medical, and public health problems are complex and interdisciplinary in nature. Coordination among researchers through a working partnership between the federal government and private industry has never been more important. A commitment to the people of the Nation and to the people of the Arctic is essential, for many of the human problems being seen today are a direct result of the tremendous development which recently has taken place in the Arctic.

Future industrial development and future effective national defense activities are dependent upon human activity. The unique Arctic climate - with its long periods of daylight alternating with long periods of darkness, vast extremes in temperature and winds, and rugged terrain - places inhabitants under severe psychological stress which breeds many health, social, behavioral and cultural problems. Difficult and unreliable communications coupled with vast distances serve to reinforce feelings of isolation. Alcohol consumption in the Arctic is among the highest in the Nation. Preventable accidents, suicide, violence, child abuse, drug abuse, and depression are all too frequently associated with living and working in the Arctic. Problems of modern society imposed on traditional Arctic occupants have resulted in serious health problems.

Air pollution in Barrow, Alaska has been traced to industrial activity in temperate climates, particularly from the Soviet Union and Western Europe. Outer continental shelf development, dependent upon deep-sea diving, is increasing in the harsh conditions of the Bering Sea. Research on cold adaptation and work performance has resulted in improved clothing and protective equipment. Future research should lead to further advances to increase human productivity and safety.

Physiological studies have confirmed that man has little adaptive capability to the cold environment of the Arctic. Rather man's increased activities in the Arctic have been achieved through improvements in clothing and equipment which allow maintenance of a warm and humid micro-environment. Lighter and more flexible clothing, and improved durability of equipment have largely been responsible for man's ability to increase outdoor work activities in Arctic conditions. Further research on work performance in extreme conditions of temperature and wind is needed.

HB 2292 will provide for the first time a clear national commitment to Arctic Science Policy. This same commitment will increase our ability to solve the human problems of man's increasing involvement with the Arctic. We need improved coordination of research efforts in order to protect our people, both indigenous Arctic occupants and people lured to Arctic environments to develop natural resources or provide national defense.

8202: Arctic Health Science Policy Principles

The American Public Health Association,

Noting that a National Arctic Health Science Policy has never been developed and that, in general, health research has received little attention;[1] and

Noting that the absence of cohesive health science research policy has led to numerous adverse consequences including, but not limited to: 1) lack of appropriate facilities and logistic capabilities to support both health sciences and industrial development in the Arctic region; 2) insufficient education and training of enough Arctic health scientists and technologists to fulfill national needs in the region; 3) conflicts between indigenous peoples and governmental and resource development interests in the Arctic; 4) conflict between public health, environmental, and developmental interests; and 5) critical health, trauma, and morbidity conditions among Arctic occupants;[1,2] and

Recognizing that the pace and scale of developmental activities and resource development projects in the Arctic are accelerating with resultant increased human health impacts to Native populations and other Arctic occupants; and

Noting that health science discoveries by numerous private and governmental agencies involved in Arctic science policy and research in past decades have resulted in considerable knowledge useful to the United States of America; and

Knowing that Alaskan Arctic resources, climatology, and geology have many similarities in other northern states in the United States and in the Provinces of Canada; and

Realizing that a bill (S.1562) has been introduced into the United States Senate in July 1981 for an Arctic Research and Policy Act to provide a comprehensive national policy dealing with national needs and objectives in the Arctic; and

Noting that S.1562 is devoted primarily to economic and security factors and not to health science needs and principles; and

Being cognizant that personal and environmental health are essential prerequisites in order to realize fully the economic values and security assets; and

Recognizing that large gaps exist in our scientific knowledge of the Arctic and its application about the nature, causes, effects, and control measures which will require extensive and costly effort; and

Believing that the current institutional framework for the conduct and support of the nation's Arctic health research effort is inadequate; therefore

1. Supports heightened status and visibility for Arctic Health Science; and
2. Requests the Congress and other legislative bodies to address health science research needs and principles in S.1562 and in any related legislation and programs.

References

1. Hickok DM, Weller G, Davis TN, *et al.* United States Arctic Science Policy. Alaska Division, American Association for the Advancement of Science, February 1981.
2. Parker W: Federal involvement in scientific research and development in Alaska. Alaska Control on Science and Technology Report, April 1981.

AMERICAN MEDICAL ASSOCIATION
535 NORTH DEARBORN STREET • CHICAGO, ILLINOIS 60610 • PHONE (312) 751-6000 • TWX 910-221-0300

JAMES H. SAMMONS, M.D.
Executive Vice President
(751-6200)

July 11, 1983

The Honorable Doug Walgren
Chairman
Subcommittee on Science, Research
and Technology
Committee on Science and Technology
U.S. House of Representatives
232 Rayburn House Office Building
Washington, D.C. 20515

Re: Arctic Research

Dear Chairman Walgren:

The American Medical Association takes this opportunity to submit its comments for inclusion in the record of hearings held June 28, 1983, on Arctic Research.

H.R. 2292 would create an Arctic Science Policy Council and an Arctic Research Commission which would promote and coordinate Arctic research and establish priorities and provide financial support for scientific research with respect to the Arctic. The bill would authorize the appropriation of $25 million per year to support the activities of the Council and the Commission.

The AMA supports the concepts embodied in H.R. 2292. While a considerable amount of Arctic research is being conducted by the federal government and the private sector, these efforts would benefit from the coordination and priority setting for such research contemplated in the legislation. In addition, because an increasing amount of human habitation is occurring under conditions of extreme cold, we believe that research concerning the effects of Arctic conditions on human physical and mental health should be given increased priority.

We appreciate the opportunity to express our view on this issue.

Sincerely,

James H. Sammons, M.D.

JHS/dap
0937p

BILL SHEFFIELD
GOVERNOR

STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

May 31, 1983

The Honorable Doug Walgren, Chairman
Science Research and Technology Subcommittee
Science and Technology Committee
United States House of Representatives
Washington, DC 20001

Dear Mr. Chairman:

The State of Alaska has a significant interest in HR. 2292, the Arctic Science Policy Bill. Establishment of a coordinated approach for support of research in the Arctic is important to both the Nation and to the State of Alaska. This bill reflects State and national concerns for research needs and for the significance of information and data retrieval in maximizing the usefulness of research activities. The bill also reflects the fact that the advancement of research is a partnership between government and private industry.

In these times of declining oil revenues and general economic uncertainty, the portion of the bill which obligates the State to contributing a quarter of the amount appropriated by the Federal government into the fund is of concern. While a long-term commitment may be difficult for the State at this time, I understand that in-kind contributions to all Arctic research activities in State government, the University of Alaska, and other public and private institutions can be counted as part of the State's contribution. Further clarification on this portion of the bill would be beneficial, however.

Should any questions arise during your deliberations on this subject, please contact me or John Katz in our Washington, DC, office at 624-5858.

Thank you for your consideration of this correspondence.

Sincerely,

Bill Sheffield
Governor

Statement of
Honorable Bill Sheffield
Governor of Alaska

Before The
Science Research and Technology Subcommittee
Science and Technology Committee
United States House of Representatives
Regarding
HR. 2292, the Arctic Science Policy Bill

Mr. Chairman, I am pleased to appear before you today to present the views of the State of Alaska on HR. 2292, the Arctic Science Policy Bill, introduced by Representative Don Young.

The need for a strong United States Arctic Science policy, and for coordination of research programs in Alaska and other areas of U.S. Arctic interest, have long been recognized.

Establishment of a coordinated approach for support of research in the Arctic is important to both the nation and to the State of Alaska. The concept and necessity of an Arctic research policy has had the benefit of over fifteen years of thought, discussion and concern. This legislation has undergone some important revisions during its review and endorsement by the Senate. The bill is now in a form that reflects State and national concerns for research needs and for the significance of information and data retrieval in maximizing the usefulness of research activities. The bill also reflects the fact that the advancement of research is a partnership between government and private industry.

Despite Alaska's image as a northern oil sheikdom, our wealth is not nearly as great as believed. The cost of doing virtually anything is much greater in Alaska than in the contiguous 48 States. Distances are vast; our population dispersed. Alaskans are discriminated against by the tax laws which take a higher proportion of our earnings, without regard to the higher cost of living in Alaska. Our projected oil revenues are declining, resulting in stringent spending limitations. Yet, these very revenues must pay for the great developmental expenditures we must incur in order to provide economic alternatives for the day when Alaska's oil, such an important contribution to this Nation's economy, will inevitably be gone.

Much knowledge is needed if we are to assure that Alaska's human and natural resource endowment is to achieve its full potential. Though great strides in Arctic research have been made in the past 15 years respecting certain key disciplines, we still lack the scientific background and engineering capability to achieve the rewards of coal and strategic mineral development, and development of offshore oil and gas resources in ice-stressed seas. We still do not know enough about the population dynamics and behavior of the bowhead whale or caribou, perpetuation and sustained utilization of which are critical to the physical and cultural well-being of dependent Native peoples. We lack knowledge of the potential impacts of offshore oil and gas developments upon our vast fisheries resources, which must form one of the mainstays of our economy after Alaska's oil resources are depleted. We even lack an economically feasible technology for provision of reliable and sanitary water and waste disposal systems to citizens of our rural communities, many of whom remain among the most disadvantaged citizens of this Nation.

In these times of declining oil revenues and general economic uncertainty, Section 9 of the bill which obligates the State to contributing a quarter of the amount appropriated by the Federal government into the Fund is of concern. While long-term commitments of this sort may be difficult for the State of Alaska at [illegible] time, I understand that in-kind contributions to all Arctic research activities in State government, the University of Alaska, and other public and private institutions can be counted as part of the State's contribution.

In this regard, I suggest that Section 10(d)(2)(A) be amended to read:

> In determining the amount contributed to such fund by the State of Alaska for a fiscal year -
> (A) the fair market value (as determined by the Council in good faith) of all facilities, services, materials, and other support contributed to Arctic research or the Fund by the State of Alaska during such fiscal year; and,
> (B) all amounts contributed by private individuals and organizations shall be taken into account.

Further clarification of the terms "facilities, services, materials and other support" as described above in Section 10(d)(2)(A) would also be helpful in assessing the State of Alaska's monetary contribution to the Fund.

If these suggestions are adopted as amendments to this legislation, then I believe we can institutionally establish the mechanisms for an effective Arctic research program, not just from the Federal sector, but in partnership with the State of Alaska and with the private sector and university community.

In summation, I would like to reiterate support by the State of Alaska for this legislation. The effort invisioned by the bill's sponsors can help us regain our standing among our circumpolar neighbors and, most importantly, assure that our Arctic regions are treated with the foresight and respect its very richness and beauty so rightly deserves.

Arctic Environmental Information and Data Center
707 A Street
Anchorage, Alaska 99501

PHONE (907) 279-4523

UNIVERSITY OF ALASKA, FAIRBANKS

July 6, 1983

The Honorable Doug Walgren, Chairman
Subcommittee on Science Research and Technology
Committee on Science and Technology
U.S. House of Representatives
Washington, D.C. 20001

Dear Mr. Chairman:

Attached is testimony offered with regard to HR229[illegible], the "Arctic Research and Policy Act." It is fair to say that I have worked on the issues germane to this bill longer than any other individual. Achieving its consideration by the Congress is of great moment to me. I do hope that your considerations and any recrafting of the legislation will be positive and result in a much more stable and vigorous position for the nation in arctic affairs.

Thank you for consideration of my testimony.

Sincerely,

David M. Hickok

David M. Hickok
Director

DMH/pb

Attachment

Statement of David M. Hickok, Director

Arctic Environmental Information and Data Center,
University of Alaska

Before the

Subcommittee on Science, Research and Technology
of the
Committee on Science and Technology,
U.S. House of Representatives

Washington, D.C.

June 28, 1983

Mr. Chairman, my name is David M. Hickok. I serve as Director of the University of Alaska's Arctic Environmental Information and Data Center for the past 11 years engaged in Arctic and Alaskan science and natural resource information transfer, dissemination, and investigative analysis. I also serve as Chairman of the Alaska Council on Science and Technology and President of the Alaska Academy of Engineering and Sciences.

I believe it is fair to say that I have worked longer and more actively to achieve consideration of the legislation before you today, HR2292, the Arctic Research and Policy Act, than any other individual. For 18 years I have urged both the executive and legislative branches of our governments (federal and Alaska) to articulate policies and programs designed to focus United States interests on Arctic issues and problems. Over these years I've written many papers and books on a variety of subjects ranging from the settlement of Alaska Native aboriginal land rights and their future economic social and cultural concerns to wildlife conservation, environmental protection, human health, arctic transportation, natural resource development, and climatic concerns. I've participated in the analysis and drafting of several pieces of important legislation affecting U.S. Arctic interests including the Alaska Native Claims Settlement Act of 1971 (P.L. 92-203), the Naval Petroleum Reserve Production Act of 1976 (P.L. 94-258), the Alaska National Interest Lands Conservation Act (P.L. 96-487), and other bills involving marine resources and technology, the transfer of the Alaska communications system from the military to the private sector, federal land management in Alaska, Alaska state science policy, and Arctic and Alaska science and resource information transfer. The bill before you today is a direct result of a paper my colleagues and I wrote entitled United States Arctic Science Policy.[1]

[1] David Hickok, Gunter Weller, T. Neil Davis, Vera Alexander, and Robert Elsner, "United States Arctic Science Policy," Alaska Division, American Association for the Advancement of Science, Fairbanks, AK, February 1981.

The imperative for this nation to articulate and commit its support to a strong, coherent arctic science policy has never been greater. It isn't a new effort, of course. The long history of prior efforts is set forth along with current needs in United States Arctic Science Policy. I have no reason to repeat this history here. Suffice to say that it began in 1964 when Senator Bartlett brought attention to the great disparity in national funding between antarctic and arctic research in the appropriations committee of the U.S. Senate. Efforts to prepare an executive branch commitment to arctic policy continued under the aegis of the former Federal Field Committee for Development Planning in Alaska. After three years of efforts within all executive agencies, a U.S. arctic policy position was agreed upon and forwarded to President Johnson for signature in 1968. Unfortunately, the President became ill in his later days of office and did not sign the statement. In 1969, the Federal Field Committee, working with Dr. Edward Wenk, Jr., then Executive Secretary of the Marine Resources and Engineering Development Council, prepared another arctic science policy statement which was adopted and published by that Council in their 1969 report Marine Science Affairs--A Year of Broadened Participation.

To this day that brief statement remains this nation's only official arctic science policy statement. Through the 1970's many other attempts were made in the executive branch to secure sustained and coordinated arctic science programs within the framework of national policy. All efforts failed due primarily to bureaucratic rivalries and budgetary protectionism. In February of 1981, somewhat in despair but ever hopeful, my colleagues and I set forth the premise that only the Congress could provide the necessary forum for resolution of the disgraceful condition of U.S. scientific endeavor in the arctic region.

Now we have a chance, thanks to the sponsors of this legislation, to begin anew to forge a policy framework for U.S. arctic science programs which will show the way to national achievement and enhancement in resource development, national defense, human and community condition, environmental protection, transportation, and communication in the arctic region.

Much of this has been said before. The record[2] is available to examine and many other witnesses before you will make salient remarks. Thus, in this testimony I wish to make only three brief summary points. These are as follows.

First, The United States has vital economic, social, and political reasons to focus its arctic policies and programs. These interests greatly transcend the bureaucratic structure of the executive branch, single disciplines in science and technology, and particular cultural or industrial interests. Only through the mechanism of some form of representative Council or Commission can these sectors be harnessed to work together in the total United States interest.

---

[2] The "record" includes my previous testimony on Sec. 1007 of P.L. 96-487, the Alaska National Interest Lands Conservation Act, together with the full text of United States Arctic Science Policy published in: U.S. Congress, House, Committee on Interior and Insular Affairs, Public Land Management Policy, Part IV. Hearings on implementation of the Alaska National Interest Lands Conservation Act (Public Law 96-487), 97th Congress, 2nd Session, 1982. Serial 97-8. Pages 359-432.

Second, the various sectors of interest referred to above are not using the knowledge currently available upon which to predicate mineral industrial growth; communication; transportation; health response; land, water, and living resource management; and research needs and priorities. All too often attitudes rather than facts prevail causing wastes in human, economic, scientific, and technological resources and the further dimunition of the United States in Arctic affairs in comparison to our circumpolar neighbors. I refer you to a number of recent U.S. General Accounting Office reports on this subject of the need to use factual knowledge for governmental resource management decisions in Arctic Alaska. The stakes for our nation in the Arctic world are too high to let this situation continue. The bill's provision for the support of information management and transfer is extremely important.

Third, and finally, the key to this legislation lies in the concept of "partnerships" between governments, local residents, the science community, and private industry. Each sector has something vital to contribute to the total national interest and each, in turn, will benefit from combined and concerted policy and program definition and execution. We must develop the means to work together. HR2292 provides these means.

Thank you, Mr. Chairman, for this opportunity to testify on this most important piece of legislation.

Alaska Oil and Gas Association

AOGA

505 W. Northern Lights Boulevard
Suite 219
Anchorage, Alaska 99503
(907) 272-1481

July 8, 1983

Honorable Doug Walgren, Chairman
Subcommittee on Science, Research and Technology
House Committee on Science and Technology
2319 Rayburn House Office Building
Washington, D.C. 20515

HR 2292--Arctic Research and Policy Act of 1983

Dear Congressman Walgren:

The Alaska Oil and Gas Association (AOGA) is the Alaska division of Western Oil and Gas Association. AOGA's members account for the majority of oil and gas exploration, production and transportation activities in Alaska.

We were contacted by members of the subcommittee's staff and offered the opportunity to testify at the June 28, 1983 hearing on HR 2292. Although we declined the invitation to make an oral presentation, we appreciate the opportunity to offer our comments for the record of the hearing.

AOGA endorses the bill's objective to enhance communication and coordination among the various groups performing research on arctic phenomena. We believe the objective can be accomplished without creation of the complex committee structure proposed in the bill. We suggest as an alternative an informal committee with members from government, academia and industry. This committee would discuss plans for Arctic research and, in this way, optimize the voluntary role of each of those sectors. Examples of this type of activity are the joint meetings that the Lease Sale Planning and Research Committee (LPRC) of AOGA has had with CRREL and the joint meeting with the University of Alaska on July 27 and 28, 1983.

We are concerned that the automatic funding contemplated in HR 2292 might result in expenditures for research projects of nominal value merely because funds are available. We believe, particularly at this time of record federal budget deficits, that available research dollars must be channeled toward only those projects of the highest merit. Efforts such as those of LPRC, CRREL and University of Alaska are, in our opinion, the best methods of achieving this goal.

Those efforts can help to identify projects of the highest value by identifying the needs of those who must function in the arctic (e.g., industry, the military, state and other governmental agencies) while stimulating academic achievement.

While AOGA supports the bill's objective of improving the efficiency of arctic research activities, we believe that this goal can and should be accomplished without the creation of a system incorporating multiple levels of review. We believe also that research expenditures should be approved on the basis of the merits of each project rather than automatic funding.

Attached are comments which further detail our view on the legislation.

We appreciate this opportunity to comment.

Sincerely,

Wm W Hopkins

WILLIAM W. HOPKINS
Executive Director

WWH:mkl.117

Attachment

c: Honorable Don Young

ALASKA OIL AND GAS ASSOCIATION
July, 1983

COMMENTS ON HR 2292-ARCTIC RESEARCH AND POLICY ACT OF 1983

The findings of the bill seem to indicate a general lack of awareness of the broad, comprehensive scope of existing arctic research programs being conducted by industry, government and academia. The contentions that the nation is suffering from a dearth of arctic research and technology and that efforts have been fragmented and accorded far too low a priority simply are not the case.

1. ARCTIC RESEARCH CONDUCTED BY THE FEDERAL GOVERNMENT

The extensive program being conducted under the outer continental shelf environmental assessment program is being performed by the National Oceanic and Atmospheric Administration (NOAA) under contract to the Department of the Interior. The emphasis of this program is on biological and socio-economic issues related to future Outer Continental Shelf lease sales. Reports of this work, which are very comprehensive, are promptly and widely disseminated. Another federal research group, the U.S. Army Corps of Engineers Cold Region Research and Engineering Laboratory in Hanover, New Hampshire, is highly respected for both its laboratory research and its field work. Its field projects emphasize ice mechanics and permafrost studies, while the laboratory includes ice basins for testing the effects of moving ice on models of ships, harbor facilities, and other structures. In addition to their studies of the physical aspects of the arctic, this group has conducted extensive studies of the biota of the tundra.

2. ARCTIC RESEARCH CONDUCTED BY ACADEMIC INSTITUTIONS

Among the programs conducted by academic institutions are the University of Alaska's research in permafrost, sea ice strength, and marine biota. The university also is recognized for its work in physical marine science. The University of Washington recently conducted an extensive study of sea ice dynamics.

3. PETROLEUM INDUSTRY ARCTIC RESEARCH

Because of the extensive biological research being done under the government programs, the industry programs primarily deal with the physical aspects of the arctic environment such as ice mechanics, oceanography, and meteorology. The industry has spent or committed over $50 million for more than 200 arctic research projects.

Regarding dissemination of the results of these studies, AOGA has an ongoing program for conveying all project reports for which confidentiality has expired to three organizations that are well known for disseminating arctic research results to the public. These are: (1) Arctic Environmental and Information Data Center in Anchorage, (2) the U.S. Army Cold Regions Research and Engineering Laboratory in New Hampshire, and (3) the Arctic Institute of North America Library in Calgary, Alberta.

Besides these cooperative industry efforts, extensive arctic research programs are being conducted by the individual companies that contemplate operating in the arctic. The results of much of this in-house research ultimately reaches the public domain through papers written by the company technical experts.

In addition to the industry-funded research being conducted in the United States, our scientific community has access to the results of many of the arctic research projects being conducted by the Canadian government and by several Canadian petroleum joint industry groups. One of these groups, the Arctic Petroleum Operators Association (APOA), has conducted over 200 projects at a cost of more that $30 million. U.S. companies are funding-participants for some of these projects.

In the area of biological research, Sohio has managed a joint-industry project for counting bowhead whales in the Canadian Arctic to get data for estimating the current population. In addition a group of companies joined in the funding of an Eskimo-managed bowhead whale census off Point Barrow in the summer of 1981. Industry studies have complimented those of the BLM, in making observations of the behavior of bowhead whales in the vicinity of dredging, boat traffic, drilling and seismic exploration in the Canadian Beaufort.

Through Alaska Clean Seas (ACS), which was formerly the Alaskan Beaufort Sea Oil Spill Response Body (ABSORB), several companies have been active in developing new methods for cleaning up oil spills on and under the arctic pack ice. Among these developments are the Arcat Skimmer, which is a catamaran-type vessel designed for operating in areas of broken ice. Tests have also been run to assess the effectiveness of using chemicals for dispersing spills in cold water.

Considerable cross-communication occurs between industry, government, and academia during the synthesis meetings and environmental impact statement hearings held for prospective lease sale areas under the auspices of the Department of the Interior. In addition, representatives of government often attend the bi-monthly meetings of the Technical Subcommittee of AOGA's Lease Sale Planning and Research Committee where joint industry projects are reviewed.

4. DISCUSSION OF THE ARCTIC RESEARCH BILL

We do not see a need for the establishment of a high-level Arctic Research Council as proposed in this bill. As an alternative, we would propose the encouragement of the governmental agencies responsible for research to solicit industry input as to the usefulness of proposed programs and to work cooperatively with industry to better identify the roles that each should have in the conduct of arctic research. A working level committee, with a maximum membership of about ten people, could be formed with several members each from government, industry, and academia to discuss plans for arctic research and to optimize on a strictly voluntary basis the role of each of the three sectors. This standing committee could function in manner similar to the effective ad hoc groups that have been assembled for OCS pre-sale synthesis meetings.

Written Testimony on HB 2292

Subcommittee on Science, Research, and Technology

June 28, 1982

Submitted by John P. Middaugh, M.D.

Mr. Chairman and members of the committee, I am John P. Middaugh, M.D., State Epidemiologist, Division of Public Health, Department of Health and Social Services, State of Alaska. I am submitting today written testimony on behalf of the American Public Health Association Task Force to develop a National Arctic Health Science Research Policy, Alaska Public Health Association, Alaska State Medical Association, and American Society for Circumpolar Health. This testimony does not necessarily represent the position of the Department of Health and Social Services, State of Alaska, which is supplying separate testimony to this committee.

A National Arctic Science Policy is needed. While administrative attempts for three decades to create an Arctic Research Policy have failed, testimony provided over that period of time uniformly has recognized the need to better coordinate research activities in the Arctic. A major opportunity exists now to establish for the first time a clear national statement and commitment to arctic science research.

Last year testimony in support of establishing a National Arctic Science Policy was given at Senate hearings by many major departments of the Federal Government including the Office of Management and Budget, the Department of Energy, the Department of Interior, and the Department of Defense. Representatives from private industry and from numerous academic centers throughout the United

States, many Alaskans representing state and local government, numerous scientists experienced in arctic research, and many arctic residents testified in support of this legislation as an effective tool to address the numerous problems of Arctic Research. Because of the tremendous scope of activities taking place in the Arctic to develop natural resources and to improve national defense activities, coordination and an interdisciplinary approach to research is required to address problems unique to Arctic conditions.

The pace and scale of developmental activities in resource development projects in the Arctic are accelerating with resultant increased human health impacts to Native populations and other Arctic occupants. Large gaps exist in our scientific knowledge of the Arctic and the application of this knowledge to the nature, causes, effects, and control measures of diseases. The current institutional framework for the conduct and support of the nation's Arctic health and research effort is inadequate.

Problems of conducting research in the Arctic are formidable. Distances are vast, the climate harsh and inhospitable, communications uncertain, logistics expensive, and experienced Arctic researchers few in number. Yet, the need for effective, efficient and productive Arctic research never has been greater. Increasing development of Alaska's natural resources, increasing recognition of Alaska's strategic importance to the nation's defense, and increasing human population brought about by rapid development and exploitation of Alaska's resources have resulted in recognition of the unique opportunities to solve problems impeding achievement of national goals in the Arctic through scientific research.

Large amounts of Arctic research are being conducted and funded by the federal government and by the private sector. Over the last twenty-five years, there has been a growing recognition that the most significant social, medical, and public health problems are complex and interdisciplinary in nature. Coordination among researchers through a working partnership between the federal government and private industry has never been more important. A commitment to the people of the Nation and to the people of the Arctic is essential, for many of the human problems being seen today are a direct result of the tremendous development which recently has taken place in the Arctic.

Future industrial development and future effective national defense activities are dependent upon human activity. The unique Arctic climate - with its long periods of daylight alternating with long periods of darkness, vast extremes in temperature and winds, and rugged terrain - places inhabitants under severe physical and psychological stress which breeds many health, social, behavioral and cultural problems. Difficult and unreliable communications coupled with vast distances serve to reinforce feelings of isolation. Alcohol consumption in the Arctic is among the highest in the Nation. Preventable accidents, suicide, violence, child abuse, drug abuse, and depression are all too frequently associated with living and working in the Arctic. Problems of modern society imposed on traditional Arctic occupants have resulted in serious health and social problems.

Air pollution in Barrow, Alaska has been traced to industrial activity in temperate climates, particularly in the Soviet Union and Western Europe. Outer continental shelf development, dependent upon deep-sea diving, is increasing in the harsh conditions of the Bering Sea. Research on cold adaptation and work performance has resulted in improved clothing and protective equipment. Future research should lead to further advances to increase human productivity and safety.

Physiological studies have confirmed that man has little adaptive capability to the cold environment of the Arctic. Rather man's increased activities in the Arctic have been achieved through improvements in clothing and equipment which allow maintenance of a warm and humid micro-environment. Lighter and more flexible clothing, and improved durability of equipment largely have been responsible for man's ability to increase outdoor work activities in Arctic conditions. Futher research on work performance in extreme conditions of temperature and wind is needed.

Research efforts in Alaska have been extremely important not only to Alaskans but to the entire country, but many of those research efforts have been hit or miss. The Centers for Disease Control still operates an ongoing research program through its Arctic Investigations Laboratory based in Anchorage. Major work by them has uncovered in rural Alaska epidemic Hepatitis B disease - a disease which leads to numerous complications including liver cancer. This discovery, the recent development and licensure of a new vaccine against this disease, and the knowledge of the epidemiology of disease transmission in rural Alaska provide an opportunity for the first time through vaccination to prevent cancer in the Arctic. Studies in progress by CDC based on controlled introduction of Hepatitis B vaccine will shed important information on efficacy, antibody level persistence, and will influence national recommendations for vaccine use. Recent studies of anemia in Southwestern Alaska by Dr. Harold Margolis of the Centers for Disease Control showed an increased prevalence of iron deficiency anemia, remarkable in its occurrence in adolescent males despite an adequate dietary intake of iron. Recently Danish investigators reported on work in Greenland Eskimos who have high dietary intake of Arctic marine animals and fish high in long chain highly unsaturated fatty acids. These fatty acids are important in interfering with production of certain prostaglandins which are important in platelet aggregation and in atherosclerosis. There is an intriguing possibility that the iron deficiency anemia found by Dr. Margolis in parts of Alaska may be related to dietary intake of similar long chain highly polyunsaturated fatty acids which interfere with platelet function leading to gastrointestinal blood loss. These dietary differences may also be related to the absence of atherosclerosis in Alaska Natives and other Arctic peoples. Currently no research is underway to investigate this very fruitful area that could have great economic, industrial, and health implications for the entire country.

Numerous experiments of nature have provided great opportunities for health science research which have been used to develop control measures for epidemic disease in the rest of the country and in the world. Epidemic Serogroup A meningococcal meningitis in 1976 and 1977 resulted in Alaska being among the first to use the new polysaccharide type-specific vaccine coupled with programs to provide antibiotic prophylaxis. These control measures were thought to be instrumental in stopping the epidemic of Group A disease and have since become standard public health practice for controlling outbreaks of Groups A and C meningococcal meningitis.

Recent experiences have clearly demonstrated a need for a National Arctic Health Science Policy. Many gaps exist both in long- and short-term planning and many fruitful research areas are underfunded or not being supported at all. A major review of the health impact of a Dow-Shell group proposed Alaskan petrochemical facility brought to light the lack of appropriate Arctic health science expertise to assess the short-term and long-term health impacts of this proposed major industrial project.

An equal absence of Arctic expertise exists in Alaska and in the nation to evaluate other major industrial projects of national importance. A major industrial mining project is commencing under the U.S. Borax Company to exploit extensive deposits of molybdenum in Southeast Alaska. Coal and potential future oil shale developments in the Arctic raise innumerable questions concerning human health. The recent discovery of huge deposits of asbestos near the Yukon River in the interior of Alaska raises many questions related to short-term and long-term human health effects associated with asbestos mining and manufacturing, particularly under Arctic conditions.

Enlightened self-interest should meld the various and sometimes seemingly incompatible objectives of health, industry, and national defense. The recent filing for bankruptcy by the Johns-Manville Corporation caused by compensation claims for asbestos related disease underscores the vast range of adverse consequences which are potentially avoidable through appropriate health research. Recent attempts at major agricultural development in the Arctic raise possibilities of long-term adverse human health effects from herbicide use. New agricultural tilling methods have been developed and applied in Alaska and, increasingly, in the entire nation to prevent soil erosion. These methods require liberal use of herbicides - herbicides such as 2,4-D recently banned from use in Alaska. The Alaska Railroad had been spraying 2,4-D along its roadbeds, but environmental and human health concerns resulted in a suit being filed and an injunction being granted. Potential human health impacts must be evaluated and weighed before major economic investments are committed.

If research efforts were successful in solving the problem of paralyic shellfish poisoning, 33,000 miles of productive coastline in Alaska could support a multimillion dollar seafood clam industry. Only limited PSP research is being supported currently.

These potential major industrial developments highlight the fact that both in Alaska and nationally, no medical or health research units exist to assess problems related to occupational safety and health or long-term environmental health consequences in the Arctic. In addition there are striking inadequacies in the data base available for Arctic health research.

Future industrial development will bring many impacts and changes to Alaska. Experience clearly has established that many of the proposed industries have in the past been associated with serious adverse impacts on workers and surrounding communities. It is possible for Alaska to provide an environment which encourages industrial development and economic growth while at the same time affording protection to our human resources and our environment.

Recently, we in Alaska were able to benefit immensely from the Alaska Petrochemical Industry Feasibility Study conducted over an 18 month period by the Dow-Shell Group, and by a review of the study by an Interagency Technical Team made up of state agency representatives. Many of the issues that were studied in consideration of future petrochemical development are, in fact, generic to any future major industrial growth. Highlighted by the Dow-Shell Group feasibility study review was the absence of a generic process within the State of Alaska to review future major industrial development projects, and the tremendously limited expertise available in Alaska to evaluate, investigate, and assess environmental and occupational health risks.

There currently exists no program within the Department of Health and Social Services, State of Alaska, specifically directed at the areas of occupational or environmental health. Occupational Safety and Health was removed in 1971, and Environmental Health was removed in 1980. At a time when there is increasing recognition of the growing onslaught of environmental and occupational hazards, we suffer from the isolation of occupational health from the mainstream of medicine and public health.

Numerous contaminations of the environment and workers have occurred in Alaska and serve to underscore the fact that these serious occupational and environmental problems exist in Alaska today and are not merely borrowed as sensationalistic examples from National experience. The discovery that workers were inappropriately using Pentachlorophenol (PCP's) in the Barrow Utilador Project led to considerable delay and expense for the contractor. Adequate information ultimately became available to allow reassurance to the workers exposed and to the community. The use of PCP's was stopped in Barrow. Shortly thereafter, PCP's were used in Ketchikan to spray a roof under construction. Strong winds spread the chemical to nearby buildings and to a residential area. Widespread illness occurred but no epidemiologic study or health assessment of exposed individuals was conducted.

Major studies on otitis media and hearing impairment have highlighted the changing epidemiology of otitis media in Alaska and have shed light on the fundamental causes of hearing loss and ear infections in rural Alaska Natives. Finally a program of influenza surveillance in which Alaska participates with the World Health Organization has uncovered new strains of influenza which have subsequently become epidemic in the rest of the country. Early identification of new antigenic variants has allowed their early inclusion in vaccine formulations to prevent influenza. To emphasize the importance of Arctic Health to the nation, the first influenza outbreak in the nation in 1982-1983 was documented in Alaska in September 1982.

Cohesiveness of view is essential between industry, state and national agencies. Many aspects of Health Science Policy should be addressed. The development of long-range planning is critical in order to meet increased requirements for accountability, fiscal responsibility, and the development of program areas in a systematic fashion. Forward planning and fiscal accountability require identification and definition of missions, goals, policies, guidelines, objectives, and criteria and mechanisms for evaluation. Site specific data bases are essential and include the elucidation of normal functions as well as responses to stress and pathological processes. Research needs to be delinated in terms of "basic" or "applied" and the development of research pursued to allow conversion of knowledge into useful human service programs. In spite of the successes of epidemiology, the unlocking and clarification of causal mechanisms remain essential. Information access, data collection, and computer support for health research have been inadequate and have led to duplicative research efforts.

Large amounts of research are being conducted and funded by the Federal Government and by the private sector. This fact is the very reason why a coordinated Arctic Science Policy is necessary - to avoid duplication, to provide enhanced coordination, to prioritize research efforts, and to improve efficiency in the conduct of research where logistical requirements are unusually demanding, and vast distances and harsh climate make research efforts extremely difficult and expensive.

Numerous agencies have attempted to create a National Arctic Science Policy in the past. However, there never has been developed or articulated a National Arctic Health Science Policy, and, in general, Health Science Policy has received little attention. Health research to facilitate defense activities and resource development is essential. National Arctic Health Science Policy is essential to mitigate the adverse impacts of increased population and developmental impacts on workers and on indigenous Native people, and to protect the health and safety of all. Improved capabilities to protect workers in Arctic environments and to maximize productivity while minimizing disruption of the fragile Arctic ecosystem and social structures of indigenous peoples are compelling needs.

HB 2292 will provide for the first time a clear national commitment to Arctic Science Policy. This same commitment will increase our ability to solve the human problems of man's increasing involvement with the Arctic. We need improved coordination of research efforts in order to protect our people, both indigenous Arctic occupants and people lured to Arctic environment to develop natural resources or provide national defense. I urge you to act decisively to support this important national legislation.

AMERICAN MEDICAL ASSOCIATION HOUSE OF DELEGATES

Resolution: 43
(I-82)

Introduced by: Richard Witt, M. D.
Delegate, Alaska

Subject: Research on Physical and Mental Health Under Arctic Conditions

Referred to: Reference Committee B
(James C. MacLaggan, M. D., Chairman)

Whereas, Arctic climatic conditions place excessive physical and mental stress on many individuals, particularly in relation to hypothermia and to behavioral alterations associated with prolonged excessive cold, darkness and solitude; and

Whereas, Such conditions exist, not only above the Arctic Circle, but in high altitudes and upper latitudes that occur in several of the states in the United States during the winter months; and

Whereas, An increasing amount of human habitation, occupation, transportation and recreational activity has been occurring under extreme cold weather conditions in connection with recent developments in oil and gas explorations, in the development and utilization of arctic mineral, marine and agricultural resources, and in national defense activities; and

Whereas, The physical, mental and environmental health impacts of such activities are important to national resource development and defense capabilities; and

Whereas, The preventive and therapeutic aspects of such disruptions to the human physiologic and homeostatic body mechanisms should have much more coordinated study and research; and

Whereas, Legislation (S 1562) has been introduced in the Senate which would "establish priorities and provide financial support for basic and applied scientific research with respect to the Arctic that is essential to our Nation's needs"; and

Whereas, This proposed legislation finds and declares that "research into the long-range environmental and social effects of development in the Arctic is necessary to mitigate the adverse consequences of such development to the land and its residents"; and

Whereas, The human health aspects of such legislative purpose and findings are as important as the economic and developmental aspects; therefore be it

RESOLVED, That the American Medical Association endorse concepts embodied in S 1562, which would establish priorities and provide financial support for basic and applied scientific research with respect to the Arctic; and be it further

RESOLVED, That the AMA urge emphasis on scientific research concerning effects of occupational and environmental factors under Arctic conditions on physical and mental health.

8202: Arctic Health Science Policy Principles

The American Public Health Association,

Noting that a National Arctic Health Science Policy has never been developed and that, in general, health research has received little attention;[1] and

Noting that the absence of cohesive health science research policy has led to numerous adverse consequences including, but not limited to: 1) lack of appropriate facilities and logistic capabilities to support both health sciences and industrial development in the Arctic region; 2) insufficient education and training of enough Arctic health scientists and technologists to fulfill national needs in the region; 3) conflicts between indigenous peoples and governmental and resource development interests in the Arctic; 4) conflict between public health, environmental, and developmental interests; and 5) critical health, trauma, and morbidity conditions among Arctic occupants;[1,2] and

Recognizing that the pace and scale of developmental activities and resource development projects in the Arctic are accelerating with resultant increased human health impacts to Native populations and other Arctic occupants; and

Noting that health science discoveries by numerous private and governmental agencies involved in Arctic science policy and research in past decades have resulted in considerable knowledge useful to the United States of America; and

Knowing that Alaskan Arctic resources, climatology, and geology have many similarities in other northern states in the United States and in the Provinces of Canada; and

Realizing that a bill (S.1562) has been introduced into the United States Senate in July 1981 for an Arctic Research and Policy Act to provide a comprehensive national policy dealing with national needs and objectives in the Arctic; and

Noting that S.1562 is devoted primarily to economic and security factors and not to health science needs and principles; and

Being cognizant that personal and environmental health are essential prerequisites in order to realize fully the economic values and security assets; and

Recognizing that large gaps exist in our scientific knowledge of the Arctic and its application about the nature, causes, effects, and control measures which will require extensive and costly effort; and

Believing that the current institutional framework for the conduct and support of the nation's Arctic health research effort is inadequate; therefore

1. Supports heightened status and visibility for Arctic Health Science; and
2. Requests the Congress and other legislative bodies to address health science research needs and principles in S.1562 and in any related legislation and programs.

References

1. Hickok DM, Weller G, Davis TN, *et al.* United States Arctic Science Policy. Alaska Division, American Association for the Advancement of Science, February 1981.
2. Parker W: Federal involvement in scientific research and development in Alaska. Alaska Control on Science and Technology Report, April 1981.

Testimony of

Dr. Oran R. Young, Director
Center for Northern Studies

My name is Oran R. Young. I am the director of the Center for Northern Studies, a nonprofit organization dedicated to nonpartisan research and education on all aspects of the Circumpolar North. In this testimony, I want to emphasize the national significance of arctic research policy as well as to suggest some revisions in H.R. 2292 which would strengthen the Arctic Research and Policy Act of 1983.

Arctic research policy is not a parochial issue of interest only to residents of Alaska and a few special interest groups. The Arctic contains vast reserves of natural resources (for example, billions of barrels of oil and trillions of cubic feet of natural gas) that are of interest to the whole country and that have recently become a focus of intense interest on the part of developers. But it also contains natural environments of great significance to the maintenance of ecological balance and biological diversity together with distinctive indigenous cultures that can hardly be ignored by a society committed to cultural diversity. Consequently, there is a compelling case for the adoption of policies that will serve to promote sensitive and balanced decisions about human activities in the Arctic. The passage of an Arctic Research and Policy Act would undoubtedly be a constructive step in this direction. But it is of critical importance that the Act be carefully crafted to promote the public interest rather than certain special interests.

1. findings and purpose. A statement of findings and purpose is an opportunity to define the public interest in a thoughtful fashion and to establish broad guidelines for those charged with implementing a policy. Such a statement should offer a balanced perspective, neither overlooking the concerns of any legitimate interest group nor overemphasizing the importance of special interests. Section 2 of H.R. 2292 is deficient in this respect; it defines the public interest in the Arctic in somewhat narrow, parochial terms and it fails to give adequate recognition to certain legitimate concerns in the Arctic. In this connection, I would advocate revising Section 2(a) of the bill substantially, and I have included a revised text as an appendix to this testimony.

2. education. Any policy dealing with research is incomplete if it does not explicitly address the problems of disseminating the findings of research programs to appropriate audiences. In the case of H.R. 2292, there is a need both to inform the general public about the nature and significance of the Arctic and to prepare a group of men and women to become specialists in making wise decisions about the use of the Arctic's resources in public sector and private sector arenas. I believe this education function should be spelled out explicitly in the Arctic Research and Policy Act. In my appendix, I have set forth some language to be included in Sections 2(a) and 2(b) to accomplish this objective.

3. interdisciplinary work. It is imperative that the phrase "scientific research" in H.R. 2292 be understood to include research in the social and policy sciences as well as in the physical and life sciences. Additionally, many of the most pressing issues in the Arctic require a careful integration of knowledge drawn from the natural sciences with knowledge pertaining to human behavior and institutions. These issues include problems of resolving jurisdictional conflicts at the international level and at the state/federal level, constructing management regimes for natural resources and the environment, and developing arrangements to promote wise land use decisions in the Arctic. To make these points clear, I have provided language in the appendix for a proposed Section 11(b) of H.R. 2292.

4. administrative arrangements. No policy is any better than the suitability and the quality of the administrative arrangements established to translate it into an operative, day-to-day program. Because of the policy significance and special character of the Arctic, the Arctic Research and Policy Act should include provisions for a strong and autonomous set of administrative arrangements. In this connection, I want to endorse the plan incorporated in H.R. 2292 to create an Arctic Science Policy Council and an Arctic Research Commission. I would, however, advocate some alterations in the character and composition of these bodies. In my judgment, the Council should be a representative body in which all of the major viewpoints regarding arctic research policy could be assured a

hearing. This would ensure that important issues would not be overlooked and it would promote a healthy diversity in the range of research priorities outlined by the Council. The Commission, by contrast, should be composed of persons with established research credentials and charged with developing a program of high quality research to pursue the priorities articulated by the council. Every effort should be made to avoid the transformation of the Commission into an arena for advocacy. In my appendix, I have included revised texts for Sections 3(a) and (b) and 6(a) and (b)(1) to lend specificity to the recomendations outlined in this paragraph.

5. definition of the Arctic. There is no single definition of the Arctic that scientists, much less policy-makers, can all accept for purposes of demarcating this region. Nonetheless, it is important that H.R. 2292 employ a definition of the Arctic based on a recognized, problem-oriented principle rather than ending up with a definition reflecting some baseless geographical compromise. Unfortunately, Section 11 of H.R. 2292 is deficient in this respect. In the interests of making the Arctic Research and Policy Act both easier to defend cogently and easier to implement coherently, I have included in my appendix a revised text for Section 11 setting forth a more straightforward definition of the term "Arctic."

Appendix

This appendix contains revised texts for the Sections of H.R. 2292 referred to in the body of my testimony.

FINDINGS AND PURPOSE

Sec. 2. (a) The Congress finds and declares that ---

(1) the Arctic, onshore and offshore, contains vast reserves of nonrenewable resources, including oil, natural gas and coal;

(2) the renewable resources of the Arctic, including fish and marine as well as terrestrial mammals, are similarly extensive and valuable in terms of human welfare;

(3) the Arctic contains many of the largest unspoiled natural environments on the planet as well as ecosystems of critical importance to the maintenance of biological diversity;

(4) the Arctic provides a setting for unique Native cultures whose members possess invaluable expertise regarding arctic conditions;

(5) the human communities located in the Arctic are highly vulnerable to disruption as a consequence of development activities and their members should be accorded a voice in decisionmaking about arctic resources;

(6) as our closest point of contact with the Soviet Union, the Arctic is a key area with regard to the national security of the United States;

(7) the Arctic is an international region featuring large marine and terrestrial systems that cut across the boundaries of sovereign jurisdictions and that require internationally coordinated management;

(8) the continued growth of human activities in the Arctic has made it imperative to plan carefully to avoid severe conflicts of interest in this region;

(9) there is an immediate need to formulate a comprehensive national policy to coordinate existing research on

the Arctic and to provide funds for research on currently neglected issues in the Arctic;

(10) this research program should deal with both natural phenomena and social issues, and it should emphasize the conduct of interdisciplinary research on the Arctic; and

(11) there is a need for an educational program to disseminate the results of arctic research in the interests of expanding the general public's understanding of the Arctic and helping to prepare a group of men and women to make responsible decisions about the Arctic.

(b) The purposes of this Act are - - -

(1) unchanged

(2) unchanged

(3) unchanged

(4) to establish an educational program to disseminate the results of basic and applied scientific research with respect to the Arctic both to specialists in the public and private sectors and to the general public.

ARCTIC SCIENCE POLICY COUNCIL

Sec. 3.(a) There is established a council to be known as the Arctic Science Policy Council (hereafter in this Act referred to as the "Council").

(b) The Council shall be composed of the following members:

(1) A chairperson appointed by the President, with the advice and consent of the Senate.

(2) Four additional individuals to be appointed by the President.

(3) Two additional individuals to be appointed by the Governor of the State of Alaska.

(4) Each of the following constituencies shall be represented by one member of the Council at all times: industries operating in the Arctic, the environmental community, Native residents of the Arctic, the academic or research community, the State of Alaska, and the federal government.

(5) The individuals referred to in Secs. 3. b(1) and (2) shall be appointed by the President with the understanding that he shall solicit recommendations from and seek the advice of the following persons in the process: The Secretary of Commerce, the Secretary of Defense, the Secretary of the Interior, the Secretary of the Department of Energy, the Secretary of State, the Secretary of Transportation (on behalf of the Coast Guard), and the Director of the National Science Foundation.

(6) The individuals referred to in Sec. 3. b(3) shall be appointed by the Governor of the State of Alaska with the understanding that he shall solicit recommendations from and the seek advice of the following persons: The Commissioner of Natural Resources, the Commissioner of Environmental Conservation, the Commissioner of Fish and Game, the Commissioner of Community and Regional Development, and the Mayor of the North Slope Borough.

(7) The following additional persons (or their representatives) shall be entitled to participate in meetings of the Council on a non-voting basis: the head of the Bureau of Oceans and International Environmental and Scientific Affairs of the Department of State, the head of the Bureau of Indian Affairs of the Department of the Interior, the administrator of the Environmental Protection Agency, the commandant of the U.S. Coast Guard, and the director of the National Science Foundation.

(c) unchanged

(d) unchanged

ARCTIC RESEARCH COMMISSION

Sec. 6. (a) There is established a commisssion to be known as the Arctic Research Commission (hereafter in this Act referred to as the "Commission").

(b)(1) The Commission shall be appointed by the Arctic Science Policy Council and shall be composed of nine members, all of whom are chosen for their credentials in the fields of research and education.

(A) At least two members shall be appointed from among individuals with expertise in the Arctic in the physical and life sciences.

(B) At least two members shall be appointed from among individuals with expertise in the Arctic in the social and policy sciences.

(C) At least two members shall be Native residents of the Arctic chosen for their ability to bring indigenous expertise to bear on arctic research.

(D) At least three members of the Commission shall be residents of the Arctic.

(E) At least three members shall be appointed from among individuals holding positions in the public sector.

(F) At least three members shall be appointed from among individuals holding positions in the private sector.

(G) At least two members of the Commission shall have recognized credentials in the field of education.

(2) unchanged

(c) unchanged

(d) unchanged

DEFINITIONS

Sec. 11. (a) The term "Arctic" shall mean all United States and foreign territory affected by the presence of permafrost (whether continuous or discontinuous), and all contiguous seas, including the Arctic Ocean, and the Bering, Chukchi, and Beaufort Seas.

(b) The term "scientific research" as used in this Act shall include research in the social and policy sciences as well as in the physical and life sciences. It shall also extend to interdisciplinary research involving efforts to integrate work from two or more of the recognized scientific disciplines.